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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

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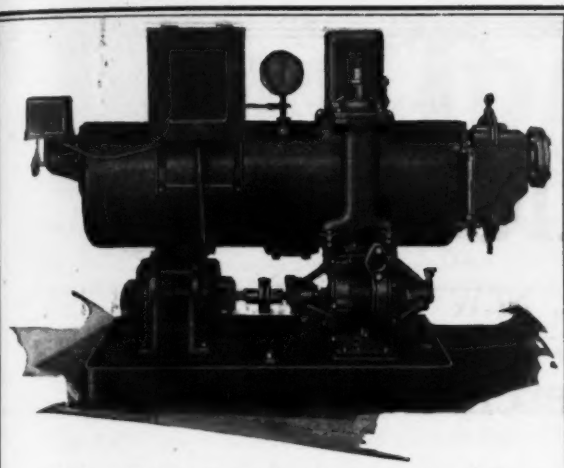

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the

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LESLIE R. PALME' PRESIDENT — GEO. S. MACDONALD VICE-PRESIDENT & TREAS — F. K. HOPPIE SECRETARY

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PAPER TRADE JOURNAL

Vol. LXXIX. No. 22 NEW YORK AND CHICAGO Thursday, November 27, 1924

DISCUSS UTILIZATION OF OUR FOREST PRODUCTS

President Coolidge, Secretary of Commerce Hoover, Acting Secretary of Agriculture Gore, Chief Forester Greeley and Other Prominent Government Officials Address Conference Held at Washington, D. C. —Permanent Organization to Be Known as Central Committee on Utilization of Forest Products an Outgrowth of Conference—Paper Manufacturers Present

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 26, 1924.—The paper industry as a whole took considerable interest last week in the National Conference on Utilization of Forest Products which was conceived by the late Secretary of Agriculture, Henry C. Wallace. A number of prominent paper manufacturers were present and participated in the meeting.

President Coolidge, Secretary of Commerce Hoover, Acting Secretary of Agriculture Gore, Chief Forester Greeley and many other prominent government officials as well as representatives of the industry addressed the two days' conference.

D. C. Everest, secretary and general manager of the Marathon Paper Mills Company, was the only manufacturer scheduled to address the conference. His talk was on "Preventing Decay Losses in Pulp and Paper Manufacture" but he was detained at the last minute and unable to reach Washington. His paper was read by O. M. Porter, assistant Secretary of the American Paper and Pulp Association, and was in part as follows:

Preventing Decay Losses

The subject assigned me relative to preventing decay losses in pulpwood and wood pulp is one which is being studied with great care by those engaged in the manufacture of all classes of chemical and mechanical wood pulp. Decay losses occur in every stage of timber life including the standing timber in the forest, the pulpwood stored along tracks or rivers or in the mill yard and in the case of stored mechanical pulp particularly, in the finished product itself.

The Bureau of Plant Industry has estimated that 10 per cent of the annual cut of pulpwood is needed each year to replace the decay loss occurring during that year. When we figure the amount of timber this represents, we realize the necessity of expending every effort to overcome this situation as far as possible. The financial loss is not the only loss to be considered. If we were dealing with an inexhaustible raw material supply we would not be so concerned, but we are exhausting a resource which is not being replaced, and some time we shall arrive at a point where manufacture from timber cannot continue, therefore it behooves us to do those things which will delay that time as long as possible. The subject of preventing decay was brought prominently to the attention of manufacturers through the work of the Forest Products Laboratory about six or seven years ago and there has been constant improvement in the handling and storing of both pulpwood and wood pulp since that time.

The saving to be gained through proper yard sanitation was so apparent that the improvement in yard storage conditions was taken up quickly and has resulted in enormous savings to pulpwood owners. The cost of properly arranging a wood yard for piling pulpwood and logs so as to permit of a circulation of air between the piles, elevating the piles above the ground by means of skids and covering the ground with cinders or other materials to keep down the vegetable growth and the removal of old bark and debris from previous piling has been so small that immediate financial benefits were received and naturally, where such condition exists, you are bound to get prompt co-operation.

One Way of Reducing Losses

The introduction and use of barking drums as against the use of knife barkers is another simple innovation which has reduced the wood losses due to barking tremendously and it seems to me as though a conservative estimate of the saving effected would be from 8 to 10 per cent of the wood used and of the best wood in the tree.

In the protection of wood pulp against the work of destructive fungi, the savings made have not been so apparent and research work along that line still continues. It is a fact, however, that the discussion of this problem has brought about much better storage conditions for pulp in the various plants throughout the country.

There is also another forest pathological problem which is in urgent need of investigation, and if possible solution. This is the problem of forest diseases. The losses from insect pests, tree diseases and timber rot is enormous. With the establishment of Forest Experimental Stations throughout the country, we will have the means of studying these pathological problems, providing pathologists are added to the working staffs of these stations, but we who are interested in the perpetuation of the forest resources of this country must see that ample financial support is given these agencies to carry on their work.

Complete utilization of such timber as is cut or destroyed in the course of logging should be the aim of those who are in charge of cutting the forest resources of this country. In the pulp industry there has been a constant effort to utilize new species of wood and the work of substitution of species promises to prolong the life of the industry very materially and possibly to such an extent as to bridge the gap between the life of the present stand of timber and the time when we shall begin to cut from reforested or protected lands.

Thrift Should Be Practiced

Thrift in the utilization of timber is to be commended, but too much economy in the expenditures of those agencies which have to deal with the conservation of resources which are being rapidly depleted, is not a practical proposition nor does it make for the economic benefit of the country.

There is one other thing which will undoubtedly be developed in

the pulp industry which will do much for complete utilization of timber in building materials. As it is today we are dependent on the physical condition of the log and the mechanical means of cutting it up, for the quality of the lumber produced, but it seems fairly certain that within a comparatively short time, substitute building materials of uniform grade may be made from the good material in low grade logs, slabs, trimmings, etc., and thus effect an enormous saving in the forest products necessary for building purposes.

The research departments of every paper and pulp manufacturing institution as well as the Forest Products Laboratory are constantly working on the problems of timber conservation, and there are several very promising ideas being developed at this time. Increased yield of pulp per cord of wood is one of the very important items under consideration and the modification of the chemical treatment bids fair to bring this about.

It is my firm belief that more has been done in the pulp and paper industry in the last ten years looking toward conservation of timber than was done in the whole prior life of the wood pulp industry extending over a period of nearly fifty years. It is also my belief that the next five years will see more done along the line of extending the life of the pulp and paper industry in this country than has been done to date.

Permanent Organization Committee

During the course of the conference a committee on permanent organization was appointed by Secretary Gore. Henry W. Stokes, president of the American Paper and Pulp Association, was a member of this committee.

Speaking of the pulp and paper situation in his talk to the delegates, Chief Forester Greeley said in part:

"Estimates indicate that the pulp and paper industry in this country must now absorb into its cost of production not less than $6,000,000 annually, lost through the decay of stored pulp and pulpwood, a loss which could largely be prevented at a comparatively slight outlay for better methods of storage, including simple treatments of fungicides."

President Coolidge Speaks

President Coolidge opened the conference and said in part:—

"This conference has been called for the purpose of further attempting to deal with the problem of our national timber supply. One of the chief items in that problem is the present appalling waste. Some of this waste may be unavoidable, but to a large extent it is unnecessary. The time is at hand when our country is actually confronted with a timber shortage. That can be remedied in only two ways; by diminishing the present waste and increasing the present supply.

"It is significant that this conference was called by the late Secretary of Agriculture, Henry C. Wallace. It was the outcome of a broad forest policy which he was engaged in developing, and to which he contributed so much ability and energy. It was, he hoped, to lead to such care in the manufacture and use of our forest products that we could greatly lessen the severity of the prolonged timber shortage of which we are entering the first stage. If this conference can forward his purpose, there could be no more worthy tribute to his devotion to forest conservation. Others may have equalled him, but American forests have had no better friend than Secretary Wallace.

"The era of free, wild timber is reaching its end, as the era of free, wild food ended so long ago. We can no longer depend on moving from one primeval forest to another, for already the sound of the axe has penetrated the last of them. We like to think that it took three centuries to harvest these immense forests. It is comfortable to believe that they will last indefinitely still. But in reality we have cut most of our timber not in the past three hundred but in the past seventy-five years, to serve the great expansion of population and industry, and there is no reason to expect a decline in the rate of cutting as long as the forests last.

Our Illusion of Permanency

"What has given us this illusion of permanency? First, our stored timber which could be drawn on with increasing speed and with the appearance of plenty until the last stick of it should be gone. Secondly, a transportation system that has permitted our sawmills to follow the retreating forests and to ship their product to distant buyers. Our markets have been full of timber. Only in the higher cost, the long haul, the near exhaustion of certain kinds of wood, and the sharply falling per capita consumption have we dimly sensed the dwindling of our forests.

"We do not know the forest situation down to the last acre and board foot, but we know it well enough to make us think and act. Of the old forest the first explorer met we have in area only one-sixth left, and in bulk of timber less than one-third. From overcutting and fire we have left on our hands something like 80 million acres of denuded forest land, most of it unfit for farming. Then we have about 250 million acres of second-growth forest, much of it poor in quality and amount. Three-fourths of our cut is still from virgin forests, difficult and distant of access, so that their products must pay for long freight hauls to reach the chief markets.

"Expressed roughly, we have left about 745 billion cubic feet of timber. From this the annual drain is 25 billion cubic feet. This total drain is most significant when we reflect that, toward offsetting it, we have an annual timber growth of only 6 billion cubic feet; and even in our young forests, where this growth is taking place, cutting has already outstripped growth. We must face the situation that at this rate we are not far from timber exhaustion.

A Movement Concerning Many

"It is to consider joint efforts toward better forest utilization that this conference has been summoned. It is a movement in which the state and national governments, the industries, the universities, the consumers, and the technical experts should join. The various government agencies equipped to help will, I know, be eager to do what they can to forward this undertaking. So vast an enterprise as the forest-using industries must not be allowed to decline for lack of raw material. We have abundant soil to produce it. We have the energy and the intelligence to learn to use our forests without waste. This conference ought to lay the foundation of a far-reaching and effective effort for forest thrift.

"We hold the resources of our country as a trust. They ought to be used for the benefit of the present generation, but they ought neither to be wasted nor destroyed. The generations to come also have a vested interest in them. They ought to be administered for the benefit of the public. No monopoly should be permitted which would result in profiteering, nor on the other hand should they be indiscriminately bestowed upon those who will unwisely permit them to be dissipated. These great natural resources must be administered for the general welfare of all the people, both for the present and for the future. There must be both use and restoration. The chief purpose of this conference is to discover policies which will, in the hands of private individuals and of public officers, tend to the further advancement of this already well-defined and securely adopted principle."

An Outgrowth of Confidence

A permanent organization to be known as the Central Committee on Utilization of Forest Products was the outgrowth of the Conference on Utilization. The action taken by the Conference during the closing hours specified that the new committee should be an outgrowth of the present Central Committee on Lumber Standards which has been operating for a long time. The Conference went on record as favoring the addition to the membership to the Standards Committee of as many men as seems necessary to carry out the work of the new permanent organization.

The report and recommendations of the Committee on Permanent Organization and Program of the Conference which was headed by A. C. Goodyear, president of the Great Southern Lumber Company, was adopted as a whole by the Conference.

Mr. Stokes Presides at Luncheon

In connection with the Forest Utilization Conference Dr. Hugh P. Baker, Secretary of the American Paper and Pulp Association, attended a luncheon on Thursday to paper manufacturers and foresters attending the Convention on behalf of the Association. Henry W. Stokes, president of the Association, presided.

Mr. Stokes said that in his estimation it is essential for the paper industry to have a close government contact. He deplored the fact that so many conferences are begun in Washington out of which nothing ever develops. It devolves upon someone, he said, to keep the ball rolling and there should be some tangible results from the conferences. No results from the conferences he said, are of course unsound and uneconomic. He did not know, Mr. Stokes said, just what the solution is, but unquestionably there is some solution and it should be found.

Paper Manufacturers Present

Among the paper manufacturers attending the conference were: Charles W. Luke, of the West Virginia Pulp and Paper Company, New York City; W. W. Sunderland, president of the Miami Paper Company, West Carrollton, Ohio; H. W. Guettler, president of the Fiber Making Processes, Inc., of Chicago; Dr. Hugh P. Baker, secretary and O. M. Porter, assistant secretary of the American Paper and Pulp Association; R. S. Kellogg, Newsprint Service Bureau; W. F. Bromley, Hammermill Paper Company, Erie, Pa.; Frederick Clark, Hawthorne Paper Company, Kalamazoo, Mich.; G. N. Collins, Dill & Collins, Philadelphia; H. A. Dickie, secretary of the Folding Box Manufacturers National Association, New York City; H. W. Ellerson, Albemarle Paper Manufacturing Company, Richmond, Va.; C. W. Hurtubis, Hammermill Paper Company, Erie, Pa.; D. E. Lauderburn, Pejepscot Paper Company, Brunswick, Me.; George N. Ostrander, Finch, Pruyn & Co., Glens Falls, N. Y.; Felix Pagenstecher, president of the Bryant Paper Company, Kalamazoo, Mich.; W. J. Raybold, B. D. Rising Paper Company, Housatonic, Mass.; G. M. Seeman, Seeman Paper Company, Chicago, Ill.; R. M. Snell, Paper Makers Chemical Company, Holyoke, Mass.; Karl A. Swenning, Mead Pulp and Paper Company, Chillicothe, Ohio; D. E. Town, Warab Paper Company, Sartell, Minn.; N. W. Wilson, Hammermill Paper Company, Erie, Pa.; R. M. Weyerhaeuser, Northwest Paper Company, Cloquet, Minn.; and Ellwood Wilson, Laurentide Company, Ltd., Grand Mere, P. Q., Canada.

Will Investigate Burn's Charges

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., November 26, 1924.—Has there been any juggling of funds in the International Brotherhood of Papermakers? Matthew Burns, secretary of the association, charges that such has occurred, although supplementing the statement by words to the effect that nothing has been uncovered to indicate that such was done wilfully or with a criminal intent. The situation will be carefully gone over in Albany the forepart of January, when the executive committee meets for a week or 10 days.

Assertions made by Mr. Burns in Albany follow investigations that have been under way for some time, it is said, in checking up the death benefit, strike and other funds of the organization. It is charged by Mr. Burns that Dominick McDermott of Bellow Falls, Vt., former treasurer of the union was simply made the "goat" and that although evidences of juggling of fund accounts have come to light, that nothing shows misappropriation on the part of any of the officers.

The matter has already been presented to Attorney Morris Hillquit, New York lawyer, who appeared for the Brotherhood in its recent wrangle with Jeremiah T. Carey, of Albany, to determine the presidency of the union. It is charged by Mr. Burns that Mr. Carey, when president of the union, acted without authority in the purchase of $6,000 in government bonds from funds of the union. It is further said that no doubt Mr. Carey acted with good faith and with the thought that the investment was a good one for the Brotherhood to make. But it is charged that Mr. Carey, who was not under bond, as president of the union, acted without authority and that the proper procedure would have been to turn over the money to Mr. McDermott as treasurer. The bonds are said to be in a safety deposit box in Albany and, although demand has been made on Mr. Carey for the same it is said by Mr. Burns that he had refused to surrender the bonds on the ground that there was nothing as yet to completely indicate that M. H. Parker had been elected to the presidency even though an opinion to that effect had been rendered to Justice E. N. Smith of this city. In other words, Mr. Carey's words, indicate that he may carry the fight to higher courts.

The Columbia Casualty Company that furnished the bonds to Mr. McDermott, as treasurer of the Brotherhood, has been notified of the situation and considerable correspondence between the two parties has already taken place.

Dr. Baker Addresses Men's Club

"The damage being done this fall in New York and New Jersey by forest fires is specific evidence of the need right here at home of better methods of forest fire prevention, if we are to retain our inheritance of wooded hills," said Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, before the Men's Club of St. John's Methodist church at New Rochelle last Thursday evening.

"Forest fires are the most destructive of the agencies which have brought about the disappearance of our forests and today we see the Adirondacks closed to hunters and tourists because of the prevalence of destructive fires. Right here in Westchester county the air has been obscured by the smoke of burning near-by forests, and altogether 7,000,000 acres of land in the United States are being burned over. Four-fifths of the remaining timber of the United States is privately owned, and about 60 per cent of this is still without adequate protection against fire.

"The citizenship of the nation needs to be aroused to the need for fostering better fire prevention methods, and we of the paper industry are glad to say that we have been leaders as an industry in the steps taken to secure national forestry legislation which will encourage the co-operation of the private owners with governmental agencies in preventing fire.

"Fire is not the only destructive agency, however. The wrong form of taxation has been another destructive agency, for instead of an annual tax upon growing forests there must be a nominal land tax, such as is now applied to agricultural land, and then a yield tax at the time the crop is cut. This will encourage the private owner to hold, instead of to cut his timber."

Special Dumping Duty

WASHINGTON, D. C., November 26, 1924.—The South African Government has placed a special dumping duty on wrapping paper imported from Sweden or Canada according to a report to the Paper Division of the Department of Commerce from American Consul Frenald at Stockholm.

This special duty is to correspond to the difference between the price at which it is sold for domestic consumption in Sweden plus costs and the sale price F.O.B. to the importer in South Africa but is not to exceed 25 per cent ad valorem.

Boston Concern Moves

BOSTON, Mass., November 24, 1924.—The Hollingsworth & Whitney Company whose offices have been located at 185 Devonshire street for several years, are now located in the new Atlantic Bank Building at 100 Milk street.

CONSUMING TRADE CONTINUES CAUTIOUS IN PHILADELPHIA

Certain Specialties Are Most Active Lines in the Fine Paper Market—Wrapping Paper Division Making Efforts to Annex Members—Philip C. Weidner a Salesman for Reigel & Co.—National Waterproofing Co. Improves Equipment—Shelton Manufacturing Co. Moves to 430 Race Street—Wolf Brothers Expand Business and Enter Into Production of New Goods.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., November 24, 1924.—There has been a decided tendency towards cautiousness on the part of the consuming trade in the actual booking of orders for future deliveries. Although the majority of paper distributors have encountered difficulties along this line in their efforts to induce freer purchases, a few of the larger dealers are enjoying a brisk business in specialties of both fine and coarse papers. Prices have been more stabilized and show signs of firming since the keenness of competition is subsiding among those firms which have been most active in marking down values. While the consumer is still watching the trend of business before placing sizable orders there is a more hopeful side to the market in the frequency of inquiries on all grades of papers and the dealers believe that just as soon as the consumer is confident that the business world improvement is not a seasonable holiday activity rather than a permanent upward movement for all lines of industries, there will be a gradual broadening of trading as the new year approaches.

Few Fine Papers Moving

Specialties used for advertising and in the publishing houses are the most active lines of the fine paper markets. Coated books, covers, broadsides, catalogue and booklet stocks used in the circulation of advertising matter are the principal staples that command the attention of those printers who cater to this class of work. The advertising specialties are being prepared for the opening of the new year's business and there is enough work on hand to keep operation at capacity in the large printing-advertising firms until the first of the year. Publishers of text books also are consuming a fair amount of fine papers adapted for book work.

The brightest outlook is taken by the local mills situated throughout the outlying territories in the State of Pennsylvania and adjacent states. The mills are reporting to the dealers the resumption of manufacture on a wider scope than for many months.

Wrapping Paper Membership Campaign

Tying up with the National Paper Trade Association's plans to institute a membership drive during the coming months, through the various local organizations, the Wrapping Paper Division of the Philadelphia Paper Trade Association, outlined its campaign for bringing into the folds those dealers who are not already enrolled, at its weekly meeting held in the Bourse. Harvey Herl, who was the delegate from the Wrapping Paper Division of the local body at the National Meeting held in Chicago, gave a summary of the plans as outlined in that gathering. There now are represented in the local Wrapping Paper Division 11 firms. The members will concentrate on enlisting the remaining five firms which are not enrolled and are confident that at least two of them will become associated before the April Convention convenes. Following the business sessions the members enjoyed a luncheon with Charles Wilder, of Wilder Brothers as chairman of the occasion.

New Salesman for Reigel & Co.

Riegel & Co., Inc., have sent out an announcement to the trade informing it of the acquisition of the service of one of the former associates of the Dill and Collins Company sales organization, Philip C. Weidner. The announcement says:

"To take care of expanding business, especially in Book Papers, Reigel & Co., Inc., have found it necessary to increase the sales force and have been fortunate in securing the services of a trained Book Paper salesman, Philip C. Weidner, who has had considerable experience."

Waterproofing Co. Improvements

Improvements in the way of equipments have enabled the National Waterproofing Company, whose Philadelphia headquarters are located in the Drexel Building, to greatly extend production in its waterproof, wax and tympan papers. The mills and manufacturing plant are located in Camden and in the mechanical department there has been installed a newly constructed Moore and White sheeter and winder to take a 48-inch roll. The new equipment supplements the recent installations consisting of two waxers, three duplex, two sheeters and a Cameron rewinder. The newest installation will be used in the manufacture of Wax Duplex papers. The National plant is now concentrating on a heavy production of Tympan papers used by the printing trade and a product which the company introduced only this year as an addition to its other lines.

Shelton Manufacturing Co. Moves

Increased business in the various lines of corrugated products handled by the Shelton Manufacturing Company in the Philadelphia territory has necessitated the opening of a local distribution center and the firm has secured these at 430 Race street. The offices in the Drexel Building have been given up and the firm is now occuping a sales office and warehouse at the Race street address under the management of P. H. Hoff, who has been representing the company in this field.

Charles W. Williams & Co. Increase Stocks

Vice President Albert Williams of the Charles W. Williams Company, with local offices in the Bourse, has announced that the firm is receiving in its Philadelphia warehouse a large tonnage in carload shipments of box makers' papers for distribution in this city and adjacent territory. Vice-President Williams stated that the Williams Company is concentrating on giving speedier service to the local box making trade and for that purpose is tripling the amount of stock of its White Glazed, Stay, Skypogan Embossed and Nassau Gummed papers in the warehouses and will also carry a full line of Cheviots, Wonder and Seafoam and Black Poster Papers. It has adopted the Slogan for Philadelphia distribution on all its correspondence, "Stock In Philadelphia For Immediate Shipments." Several carloads already have been installed in the Philadelphia warehouse and others are coming in daily. The stocks here will be distributed to the Southern States as well as to Philadelphia consumers. Manager Elmer N. Renner is in charge of the local branch and under his direction the expansion will be carried out.

New Envelope Distributor

Miss Cecilia B. Rudolph, who long has been identified with the envelope manufacturing and distribution trade in this city, has organized her own business, under her name, for the distribution of envelopes. She has secured offices in Room 1303, Real Estate Trust Building and is specializing on plain and printed envelopes. She formerly was connected with Charles J. Cohen Company and with C. A. Baker. She produces a line of commercial, hand folds and special sizes manufactured especially for her distribution.

Wolf Brothers Expand

With the acquisition of larger floor space the envelope manufacturing firm of Wolf Brothers, 330 N. 12th street, have greatly extended the old standard lines the firm has manufactured for years and have entered into the production of other paper goods. There is now being produced besides the envelope stock the Standard Drinking Cups, Counter Envelopes for notions, and Commercial

(*Continued on page 32*)

MONTREAL GETS MORE LIGHT ON ABITIBI COMPANY PLANS

Report Has it That New News Print Mill Will Not Be in Operation Before 1927—Terms of Pulpwood Concession in Manitoba Arouse Strong Opposition—Opinion Growing That Export Tax Will Be Put on Pulpwood—October Paper Exports Were Up and Wood Pulp Down—Newspaper Comments on Reforesting Work in the Watershed of the St. Maurice.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., November 24, 1924.—It is intimated here that the new news print mill which is under consideration by the Abitibi Power and Paper Company will not in any case come into operation before 1927. The plan is still in its early stages and it is still undecided how much capacity the mill will have, as this will depend on the amount of power available after the new power development of the company has filled the company's present needs. The first stage of the proposed expansion will come with the development of the power owned by the company at the Long Sault. Work on this development is to start in the Spring and to be completed early in 1926, when about 30,000 h.p. will be available, some of which will be used in the present mills of Iroquois Falls. It is expected that the new mill of the company, when it does come, will have a capacity of at least 300 tons of news print per day, and thus increase the output of the company to a total of about 800 tons per day.

Objection to Terms for Winnipeg Mill

The Provincial Government of Manitoba has been induced by strong pressure in the West to appeal to the Federal Government at Ottawa to revise the terms of the proposed pulpwood concession in Manitoba, which, under the arrangements made, was to have been auctioned off on December 16. The acquisition of the pulpwood limits in question is one of the conditions on which the plan for constructing a pulp and paper mill at St. Boniface, through J. D. McArthur and Chicago capitalists, depends for its completion. In spite of the natural desire of the public to see a news print mill erected near the city of Winnipeg, which would mean the initiation of a news print production in the Province of Manitoba, objection has been raised, and is being pressed, to the form of conditions under which the pulpwood limits are being offered for sale. The Free Press, for instance, which is the largest consumer of news print in Western Canada, voices the desire of having a paper mill established in that Province but declares that it "feels it is bound to say that the proposed pulpwood concession, upon the terms set out in the specifications, is not in the public interest, and should not be proceeded with." The situation becomes a little more complex from the fact that the limits are being offered by the Dominion Government, which controls the natural resources of the Prairie Provinces. One of the arguments advanced by the newspaper editorial is that the pulpwood concession of over 40,000 square miles, running as it does from the south of Lake Winnipeg to Norway House and northwesterly to The Pas, embraces practically all the available and accessible pulpwood areas in the Province. While the concession does not give the successful bidder all the pulpwood in this area, "it locks the whole district up for five years, while a pulpwood berth containing 3,000,000 cords of pulpwood, is being selected from it." In addition all the timber in this vast area is also locked up for five years "under conditions which give the promoters of this company an opportunity of picking up every stand of timber that is worth anything." The paper goes on to declare that "though a pulp and paper mill is most desirable, there is nevertheless such a thing as paying too much for it." It protests against giving monopoly rights of cutting for half a century and declares the arrangement will prove "improvident and oppressive."

Price Bros.' Kenogami Mill

The news print mill of Price Bros. & Co. at Kenogami is gradually being brought back into production after the dislocation caused by recent landslide there in which the president of the company lost his life. It is understood that the output is now around two-thirds of normal as compared with one-half a couple of weeks ago. This would represent a production of about 350 tons or more. It is expected that the 500 tons capacity will easily be reached by the end of December. The Waterous Company has received a contract from Price Bros. for twelve pulp grinders. These have been ordered by the company as one of the developments in its comprehensive expansion program covering the next few years. The manufacture of these machines is being carried on under patent rights which the Waterous Company has recently secured, permitting their use in this country.

Impose Export Tax on Pulpwood

There is some belief here that while the Federal Government will not place an embargo on the export of pulpwood, it may bring forward the proposal to place an export tax on pulpwood. Influential representations in regard to the serious depletion of Canada's pulpwood reserves continue to be made. The latest comes from Hubert Biermans, President of the Belgo-Canadian Pulp and Paper Company. He states that the question of an embargo on pulpwood is a question of life and death to the paper industry in Canada and he prophesies that if no action is taken, Canadian mills will be unable to continue their dividends, while American mills will be flourishing and making money. He maintains that even under present conditions United States mills can manufacture paper more cheaply from Canadian wood than is possible for Canadian mills, inasmuch as the purchasing and holding of timber lands in Canada by Canadian mills calls for very heavy capital charges, and, in addition, entails large interest payments to the banks for loans covering the heavy cost of providing a supply of wood for two years in advance of its consumption. Mr. Biermans, in view of the rather difficult political situation, would allow the farmers to continue to export pulpwood from their lands, but he suggests that all future grants of land to farmers should contain a prohibitory clause in regard to the exportation of pulpwood.

Paper Export Up and Wood Pulp Down

The exports of pulp and paper in October were valued at $11,648,786 which was a decrease of $7,680 compared with September. October exports of sulphate and mechanical pulp showed increases over the previous month as did the exports of book and writing papers also. Exports of other grades of pulp and paper, however, were not very far behind the September figures. For the first ten months of this year the total export of pulp and papers were valued at $114,699,119. For the corresponding period of 1923 the figure was $116,926,588, the 1924 figure being a decrease of $2,227,569. This decrease is due to the smaller exports of wood pulp. The ten months' total of this year's paper exports on the other hand is ahead of the same period for 1923 by $4,629,570. October exports of pulpwood were 105,951 cords, having a value of $1,112,333 in comparison with 96,353 cords valued at $1,057,410 exported in September. The first ten months of this year showed a total exportation of pulpwood of 1,096,376 cords valued at $12,253,171, while in the corresponding period of 1923, the total exportation was 1,261,871 cords valued at $12,170,136.

Reforesting in Quebec

Reigel & Co., Inc., have sent out an announcement to the trade in- watershed of the St. Maurice says:

(*Continued on page 97*)

CLAIM PULP MATTER DEPOSIT DAMAGED FARMING PROPERTY

Trial of Action Brought By Farmers Against DeGrasse Paper Co. in Progress—Decision One of Vital Importance to Defendant—Professors in St. Lawrence University, Prominent Business Men and Farmers Called to Testify—Real Estate Man First Witness for Plaintiff—Several Witnesses Testify That Deposit Does Not Depreciate Value of Land.

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., November 26, 1924.—A case that is creating a great deal of interest in paper mill circles in this state is now being tried before County Judge James J. Nolan at Canton. The action is brought by Murray Dodds, representing the farmers owning land along the DeGrasse River, against the DeGrasse Paper Company.

The action is brought to recover damages alleged to have been done to the farming land owing to the overflow of the DeGrasse river and the deposit of pulp matter from the stream on the farming land. Should the decision be favorable to Dodds it will mean that all farmers along the river will be privileged to bring similar suits against the company and perhaps force it to shut down. The company employs 450 men and is the main industry in its community and should an unfavorable decision be given for it, it will mean a distinct loss to the community. However on the other hand should it be proved that the pulp matter from the mill has decreased the value of the farming land on the banks of the river, the farmers of that community have sustained a huge loss.

Well Known Men Testify

Professors in St. Lawrence University at Canton, leading business men of the North, farmers and tradespeople have been called upon to testify in the case.

John Jackson, president of the company said that he considered the case most important, especially so, he said, since the closing of the mill will mean throwing 450 men out of work. Though some consider it a test case, Mr. Jackson, does not hold this opinion since the circumstances in each case might vary widely. He believes that his company has a strong case and that the testimony of the men, such as Dr. J. M. Payson, Dean H. E. Cook, President Roy Bassett of the village of Canton and others who deservedly are regarded with such high esteem in this community, has great weight.

President Roy Bassett, first of the witnesses for the plaintiff, testified that he had been connected with a real estate firm for the past eight years and had observed the farm of Dodds about a week or 10 days ago. He estimates its present value between $10,000 and $12,000 without stock.

He said that there were 2,800 persons living in Canton, not including the student body of St. Lawrence University. There were 780 houses and, with very few exceptions, these were connected with the sewer which empties into the river about 3½ miles from the farm of the plaintiff.

Set Value at $10 an Acre

He further testified that after making a thorough examination of the farm he estimated roughly that the value of the lowlands is about $10 an acre. He also said that assuming that the land were covered with a deposit, as was the contention of the plaintiff, in his judgement it would not make any difference in the value of the land.

Dean H. E. Cook, former director of the state school of agriculture at St. Lawrence University, and now the owner of a certified milk plant, was the next witness and stated that in his opinion the lowlands of the plaintiff's farm could not be drained or cultivated. He also stated that if there were any deposit on the land it would not make any difference in its value.

On the same day that Cook visited the Dodd's farm he visited the Matthew's farm situated on the DeGrasse river a short ways from the Dodd's farm. On this farm he saw some evidence of deposit from the river but other than being a physical hindrance, it did no harm to the farm, he said.

Abner D. Whitney, president of the Madrid bank, a farmer, a member of the agricultural committee of the university, and a trustee of the institution, testified that on November 18 he visited the farm when the lowlands were under snow and ice. He estimated the value of the land as $30 or $35 an acre and the lowlands as being worth $10 an acre.

Testimony of a Chemist

John Comstock, professor of chemistry at St. Lawrence University, testified that on several occasions he had made analysis of the water during July. Some of the water was taken near the plaintiff's farm and some from a distance away. In three cases he found a suspension of matter in the water but could not identify it other than in a general way as organic matter. More of this was found below the mill than above the mill near the farm.

F. N. Alquist, instructor at the same institution, testified that he had taken samples of the farm land and analyzed them. He found that samples near the river contained acid and those away from the river were very acid. He also analyzed water taken from the river near the farm and found it contained only a little acid.

Harry Mace, an employee of the mill, testified that in the tumbler room, where pulp stone is stored, there is no pulp. He also testified that the ditch from the tumbler room to the river has always been dry as far as he has observed.

Mr. Jackson then received permission from the court to give the following statistics concerning the mill. The company has outstanding $2,475,000 common stock and $500,000 preferred, $189,000 first mortgage bonds and $575,000 second mortgage bonds, inventory of wood, coal and raw material $1,500,000. The average weekly payroll for 10 months of 1924 was $14,479 and for 1923 was $14,826. The average number of employes for 1924 was 452 and for 1923, 478. The weekly production of news print for 1924 was 1,053 tons and in 1923, 1,015 tons. Eleven tons of wrapping paper are produced each day. The company manufactures at least 70 per cent of the weed pulp used in its mill.

An adjournment has been taken in the case which will be resumed again in the near future.

Want Forestry Appropriations

WASHINGTON, D. C., November 21, 1924.—The National Forestry Program Committee headed by R. S. Kellogg, Chairman, held a Conference yesterday with General Lord, Director of the Budget, in connection with forestry appropriations.

The Committee urged that the Director of the Budget request an appropriation of not less than $1,000,000 for fire protection under the McNary Clarke law; and an appropriation of $200,000 for seeds, reforestation under the law, and an approximation of $3,000,000 for the Weeks law. The Committee left a statement with General Lord.

Those attending the Conference in addition to Mr. Kellogg were: George W. Sisson, president of the the Empire State Forest Products Association; D. L. Goodwillie, chairman of the Forest Policy Committee of the Chamber of Commerce; Philip W. Ayres of the Society for the Protection of New Hampshire Forests; L. B. Palmer, American Newspapers Publishers Association; Frank G. Wisner, Wilson Compton and F. C. Knapp, National Lumber Manufacturers Association; George D. Pratt, President, and O. M. Butler, American Forestry Association; Dr. Hugh P. Baker, American Paper and Pulp Association; John Foley Association of Wood Using Industries and Charles Lathrop Pack, American Tree Association.

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Accuracy First

ACCURACY is the keynote in the design and operation of the Mathieson Multi-Unit Tank Car. Absolute accuracy in loading is the basic feature that creates all the other advantages of this car—maximum safety, economy and convenience in the transportation and use of Liquid Chlorine.

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FIRMNESS OF FINE PAPERS HOPEFUL SIGN IN CHICAGO

Paper Men Take It As a Promise of Better Business Soon—Coarse Paper Demand Improves While Boards and Containers Show Turn for Better—Chicago Paper Co. Holds Series of "Open House" Affairs for Edification of Their Customers—Fibre Boxes Must Continue to Carry Description of Contents—Container Association Working on Simplification Program.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, Ill., November 24, 1924.—The present firmness of the fine paper division of the market augurs well for the immediate future and indicates what is taking place at this time. Complete confidence in the outlook is discernible on every hand while various concerns even display this assurance by launching publicity campaigns of considerable enormity. One unmistakeable sign of firmness is the taking up of loose ends here and there. For instance, on some grades, specials ordinarily are obtainable at a quarter cent below prevailing market quotations but practically all of this has disappeared, for the time being at least. Sulphite papers now go at better figures which also reflects some of the market's firming up movement. Rumors of advances on these appear to have no foundation and no one expects them to be shoved ahead to any appreciable extent very soon.

See Big Coarse Paper Trade

An improvement in coarse paper demand is reported over what has prevailed since early Fall. A number of grades, bringing only a fair demand thus far, quickened perceptibly recently, much to the gratification of coarse paper folks. It is stated that business in kraft and sulphite varieties should be plentiful for at least two or three months, extending well into the new year. Large consumers are active with quantity orders and have been for thirty days or so. Firmness has been the rule with price increases on a variety of grades. Further ones may be looked for ere long. Their size is a matter of conjecture.

Boards and Containers Show Steadiness

While discouraging developments took place in the board and container market in the past month there has been some turn for the better, according to late reports. Right now this branch of the industry should be in the midst of its very busiest season, but it is far from it. A year ago was considerably better, although even then it was not looked upon as a brisk period. Boards in general are going better with manila lined chip leading the way and bringing the best price. Concessions have come to be quite the fad and in some cases consignments have been delivered for figures below what is termed the prevailing market. But there seems to be evidence of a change and, with quickened demand, quotations will again climb.

Paper stock fluctuates slightly either way, depending upon how heavy the call and how abundant the supply. Right now they hold fairly steady. Upper grades maintain a high point in spite of reports that business is exceedingly dull. If the board and container market advances, there are sure to be advances on lower varieties of paper stock.

Scarcity of rags keeps roofing stock prices at a top notch level. They are even now above what has prevailed for the past thirty or sixty days. Advice is to the effect that demand is fairly strong and evidence indicates that it will continue so for the balance of this year.

Chicago Paper Co. Entertains Customers

A most unique series of "open house" affairs was staged by the Chicago Paper Company within the past week in an effort to get more intimately acquainted with each customer. These were termed "get-acquainted-stags," the purpose being to have each patron know every member of the organization, including those who do not come in contact with them, and see the facilities maintained to serve them. The idea was the particular device of W. N. Gillett, vice-president of the company.

These stags were held in the evening, beginning Tuesday, November 18, occuring on that and the three nights following and on the Tuesday of November 25. Each evening a certain number of the sales staff were hosts to their particular group of customers until the entire clientele was entertained. On November 5 a preliminary announcement was sent out urging acceptance of the invitation which followed a short time later.

Following the close of the day's work on these dates, the office of the Chicago Paper Company was cleared of its desks and chairs and long tables placed in their stead. At 6:30 dinner was served, but while waiting for it, customers were piloted in groups about the establishment so that they might see what facilities of this organization were at their service. After the dinner was served, Mr. Gillett made a short address of welcome. He was followed by Earl Bowman, a well-known figure in the paper industry and a very able speaker. He talked on the value of direct advertising to the printer. Songs were sung during each evening and plenty of entertainment interspersed the various features. When each man left he carried with him a suitable souvenir of the occasion.

The entire establishment of the Chicago Paper Company was attractively decorated for this series of meetings. The office itself was retrimmed in pleasing style while unusually bright electric lights were installed in all fixtures throughout the place so that inspection might be made under the most favorable circumstances.

Fibre Boxes Must Carry Description of Contents

The National Container Association, from its headquarters in Chicago, report that the Interstate Commerce Commission has suspended until March 1, 1925, certain changes recently carried in territorial tariffs applicable in Official Classification Territory, whereby the provision requiring that Description of contents be shown on fibre boxes, was waived.

Therefore, at least until March 1, 1925, it will be necessary to continue to show description of contents on corrugated and solid fibre boxes for freight shipment in all territories. The Commission was to hold a hearing at Washington, November 25, as a result of which it was expected that whatever rule was adopted it would be made uniform for all three territories.

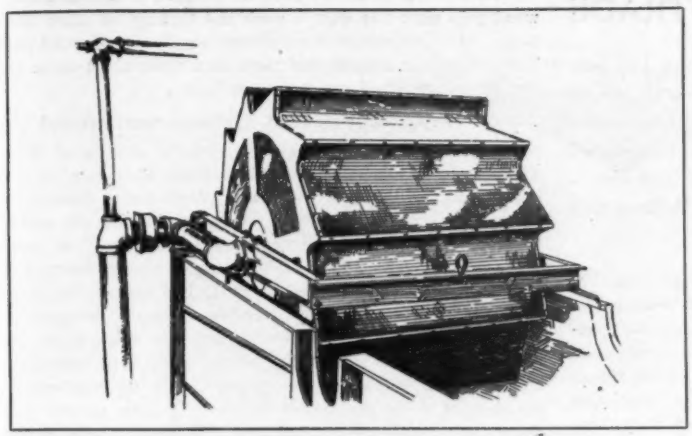
Container Association Works for Simplification

That the National Container Association is cooperating with the Department of Commerce in its standardization program, is evidenced by the fact that Clarence J. Schoo, Frederick A. Norris and H. D. Cornwall have been appointed a special committee to cooperate with the Department of Commerce in an effort to promote box board and container simplification. At a meeting of the general committee on this subject, held in New York City a few weeks ago, to discuss this simplification, George Gair was the representative of Secretary Herbert Hoover, of the Department of Commerce.

Oscar Gumbinsky Resigns Presidency

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., November 22, 1924.—Oscar Gumbinsky, formerly of this city and one time president of the Eddy Paper Company and at present residing in Chicago, has resigned the presidency of the Daniel Boone Woolen Mills. His successor is Joseph Byfield, president of the Hotel Sherman Company, and boasting 25 years' experience in the textile and garment business. Other changes in the company's official personnel are expected in the near future.



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This New Washer puts waste effort to work

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"Your paper is made in the beaters"

The new Dilts Washer cleans a full tub of stock in a third the time required by a hexagonal bucket type washer.

It keeps ahead of a 5-inch stream of water under 15 pounds pressure.

Stock rushing around the beater tub drives the new Dilts Siphon Cylinder Washer. This saves power, driving belt, gears, raising racks and wear and tear. The new Dilts Washer rotates at the same speed as the stock, derives its power from the stock yet does not retard circulation.

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HOLIDAY SEASON ALREADY HELPING THE TORONTO TRADE

Canadian Paper Association Fails to Put Net Price List Into Effect and Long Price List Prevails—Provincial Paper Co. Reports Good Year's Business—Nipigon Corporation Producing Pulp at Fair Capacity—Ontario Associated Boards of Trade Discuss Proposed Pulpwood Embargo—Lieutenant Governor Cockshutt Speaks on Reforestation Policy.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ontario, November 24, 1924.—The paper trade in Toronto continues to improve with the advent of colder weather and the near approach of the holiday season. Mills are fairly well employed and jobbers report that the last of the month has shown quite a change over the first week or ten days. The net price list, which was to have been issued by the Canadian Paper Trade Association and put into effect last week, has for the present been withdrawn and the long price list still prevails. R. I. Finlay, of Toronto, President of the Canadian Paper Trade Association, and T. Albert Brown, of Brown Bros., wholesale paper dealers, Toronto, were in Montreal last week attending a conference between the C. P. T. A. and the representatives of the Canadian mills in reference to the long price list. At a meeting of the Ontario section held in Toronto lately the question was fully discussed and the matter of changing over to a net price list postponed for the present. The members of the Toronto Typothetæ have raised strenuous objections to the elimination of the long price list which has been in effect in Toronto for two years and have even gone so far as to apply for a charter and become incorporated into a concern to operate its own jobbing house. This action has halted progress on the whole price list proposition for the present.

Provincial Company Have Good Year

The Provincial Paper Mills Company, Toronto, who have plants at Thorold, Mill Roches, Georgetown and Port Arthur and turn out large quantities of book, ledger, writing and bond paper will close their fiscal year next month and it is understood that the forthcoming financial statement will show a fair increase in earnings over those of a year ago. The company will have the advantage of the Port Arthur mill for the full year whereas in 1923 this unit was operated for only part of the period, when it did not add anything to the earnings of the parent company. This year's results will help to swell the revenue of the Provincial Co. The Port Arthur plant, which caters largely to western requirements, has a daily capacity of forty tons of ground wood pulp, sixty tons of bleached sulphite and thirty-five tons of book paper.

Reducing Cut of Pulp Wood

George B. Nicholson, of Austin and Nicholson, Chapleau, Ont., states that his company which took out fifteen thousand cords of pulp wood last year, will cut only three quarters of this amount during the present season owing to diminished demand. Last year Mr. Nicholson says that help was very scarce in the bush at this time but now labor is plentiful, wages running around thirty dollars a month and board for good men, which is a considerable drop.

Porcupine Company Had Busy Season

The Porcupine Pulp and Lumber Company, of Hoyle, during the past season took out over twelve thousand cords of pulpwood, which was rossed at their mill. This season they are taking out only five thousand cords. The company have purchased the cutting rights on fifteen hundred additional acres and report this season that prices are about seventy-five cents a cord less to the jobber taking out wood than last year at this time. The Porcupine Company say that labor is plentiful and cutters are getting two dollars and fifty cents a cord at the jobber camps.

Producing Pulp at Fair Capacity

Nipigon Corporation, Limited, of Nipigon, is operating its ground wood pulp plant five days a week and turning out about forty tons daily. The Corporation has sufficient supply of pulpwood until next year. The firm reports that there is a material let-up in the purchasing of pulpwood and prices are lower.

Proposed Pulpwood Embargo was Debated

At the annual meeting of the Ontario Associated Boards of Trade, held in Ontario last week, a lively discussion arose on the question of the export of pulpwood. A resolution from the Guelph Board asked that legislation be enacted prohibiting the export from Canada of all timber in an unmanufactured state. An amendment was moved proposing that the government should impose a graded tax on all pulpwood exported to the United States. This suggestion was strongly supported by Northern Ontario delegates. A. J. Young, of North Bay, said that an embargo would injure the very people whom it was supposed to benefit. Past experience had shown that pulpwood prices were determined, not by the local mills, but by the demand from the United States. As little as two and three dollars per cord, he said, had been offered by Canadian mills for certain types of wood cut by settlers, where United States mills had paid as much as fifteen. Were an embargo imposed settlers, who have no source of income other than their pulpwood, would be forced to leave the country and that would be a serious blow to Northern Ontario. The whole matter of an embargo was finally referred to a special committee for report at next year's meeting.

Enlarged Policy of Reforestation

Hon. Henry Cockshutt, Lieut.-Governor of Ontario, was entertained to a banquet by over four hundred business men from all parts of Ontario at the King Edward hotel. A number of pulp and paper representatives were in attendance. Hon. Mr. Cockshutt said that one of the pressing problems which had to be faced and faced immediately, was the conservation of the forest wealth of Ontario. An enlarged policy of reforestation was necessary. This could be accomplished by wise cutting or lumbering and by planting. He said that perhaps the best forester of all was nature herself but nature needed to be helped by the methods and the means which modern science had placed within our reach.

Pulp Mill Starts Up Operations

The Davies Pulp and Paper Company has taken over the Davies section of the old Foley-Rieger Company's ground wood pulp plant at Thorold, Ont., and is now turning out ground wood pulp. F. A. Fish is the manager of the company, which has good prospects.

Attractive Display of Colored Tissues

A local lithograph company has turned out for the Interlake Tissue Mills Company of Merritton, Ont., a fine specimen of lithographing in the form of a window display card featuring a dancing girl, in a real, crepe tissue paper dress. The card is done in some thirty-seven colors representing the various lines produced by the Interlake Mills. A very pretty color card accompanies the window display one. The demand for all kinds of colored and crepe tissues is active owing to the approaching Christmas season.

Notes and Jottings of the Trade

Francis Wright, of Smith, Davidson and Wright, wholesale paper dealers, Vancouver, B. C., was a recent caller on the trade in Toronto.

R. A. McInnis, manager of the Abitibi Power and Paper Company, Iroquois Falls, Ont., was in Toronto during the past week attending the annual convention of the Associated Boards of Trade.

H. G. Schanche, who is in charge of the forestry department of the Abitibi Company, Iroquois Falls, Ont., has been advanced to the grade of senior membership in the Society of American Foresters.

N. E. Wainwright, of the Provincial Paper Mills Company, Toronto, spent the past week in Montreal calling upon the paper trade.

Chained Books, for Princes Only

Time was when books were made for Princes only—and the Princes could not read. With books so scarce and precious, reading was a special trade, professed by Clerks.

It seems that even Clerks were not to be trusted too much, so hearty chains held hand-embellished volumes secure from thieving readers.

Editions of one volume, inscribed by hand, always require special care. Business ledgers and personal diaries go into the safe— a modern substitute for the forged chain. But the books of larger social value are not so limited in edition. They are reproduced by thousands and by millions to go into palace and hovel alike. Across every business desk each day passes more of the printed word than Princes with their chained books saw in a lifetime.

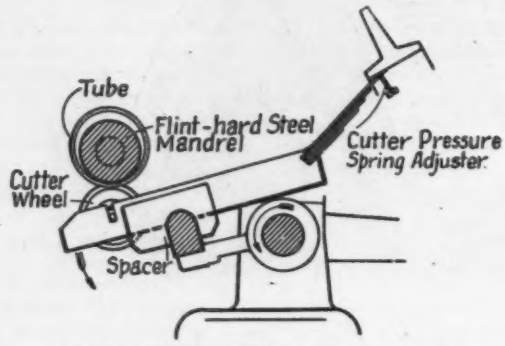
Paper, plentiful and low in price, has freed literature from its chains.

Hammermill Paper Company

Erie, Pennsylvania

A NEW TUBE CUTTER

Manufacturers of paper tubes, also manufacturers of paper products utilizing paper tubes in the making of all kinds of circular boxes, containers, etc., will welcome the arrival of a new tube cutting machine built on a new principle. Heretofore it has been the common practice to cut tubes on a soft steel or bronze or brass mandrel, utilizing a circular cutter wheel much like the wheel of a pipe cutter, placed in gangs according to the length of the tube required, these cutters pressing through the wall of the tube by a rolling



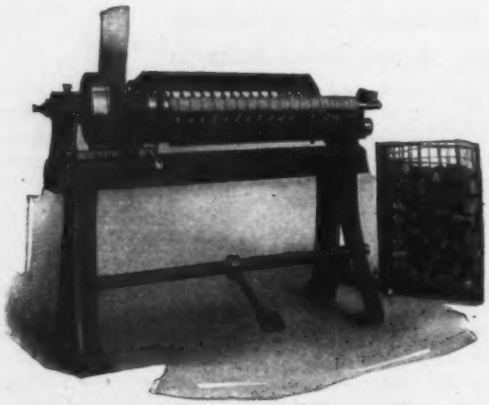
CAMACHINE TUBE CUTTER

motion. The trouble with this principle is that the mandrel on which the tube is supported is gradually grooved by this process, so that it must be resurfaced quite frequently and discarded after comparatively short service. Furthermore, it has been noted that a considerable number of these mandrels must be on hand, as the mandrel must fit quite snugly in the hole of the tube. So much for the mechanical difficulties.

The major complaint with the old style tube cutter is the fact that the edges of the tubes thus cut are apt to be more or less frayed inwardly, presenting an unsightly appearance; and what is more serious at times, this fraying is often very troublesome in utilizing the tube which has been cut in this manner.

Many Improvements

The Cameron Machine Company now announces that it has developed a tube cutting machine which avoids all of the defects and disqualifications of the machines heretofore available in the market,



with certain added conveniences in the operation of the machine which will be appreciated by the practical user.

In the first place, the mandrel on which the tubes are cut is flint-hard, and its surface remains smooth and polished even after the most strenuous service. In other words, this mandrel is made of high grade steel and is as hard and tough and wear-resisting as the modern science of heat treatment can make a piece of steel. It is practically indestructible.

Instead of utilizing the little score cutting wheels familiar to those now using tube cutting machines of the old design, the new Camachine Tube Cutter uses a wheel 3 inches in diameter, made of high grade steel of a special formula and specially heat-treated. These wheels are mounted on ball bearings in holders which are spaced apart to suit the tube length to be produced. Each holder is spring controlled individually, so that the pressure on the cutter wheels is no greater nor any less than required for the job in hand.

Another feature is that the mandrel not only remains unharmed after long service, but it need not be of the same diameter as the size of the hole in the tube, there being quite a wide range of tube sizes which can be cut on the same mandrel.

The Most Important Feature

The most important feature of all in connection with the new Camanchine Tube Cutter is the fact that the tubes cut on it present a practically perfect and faultless edge. The cutting is smooth; the outside edge of the tube at the point where it is cut is clean and smooth; and the inside edge is free of fraying or bulging or any objectionable features whatever. This is, of course, the result that will appeal most strongly to the practical man, and it is gratifying to him to know that these good results can be obtained at less expense of upkeep and with no great first cost than in the case of the old style machines.

The Cameron Machine Company, builder of his machine, is willing to back up its claims for it by shipping the machine to anyone interested in proving its merits, and leaving it for thirty days in the hands of the prospective customer, without any obligation on his part, relying on the machine to do its own selling through its ability to demonstrate that it can save money and at the same time turn out an improved product.

PHILADELPHIA TRADE CAUTIOUS

(*Continued from page 24*)

Mailing Envelopes of large proportions. Part of the Warehouse has been converted into manufacturing space and in it has been installed considerable new machinery, the firm now having a complete mechanical service of the newest adjustable equipment producing all sizes of envelopes and other specialties. The Counter Size Envelopes for notion containers are among the latest of paper specialties which the firm has added to its lines.

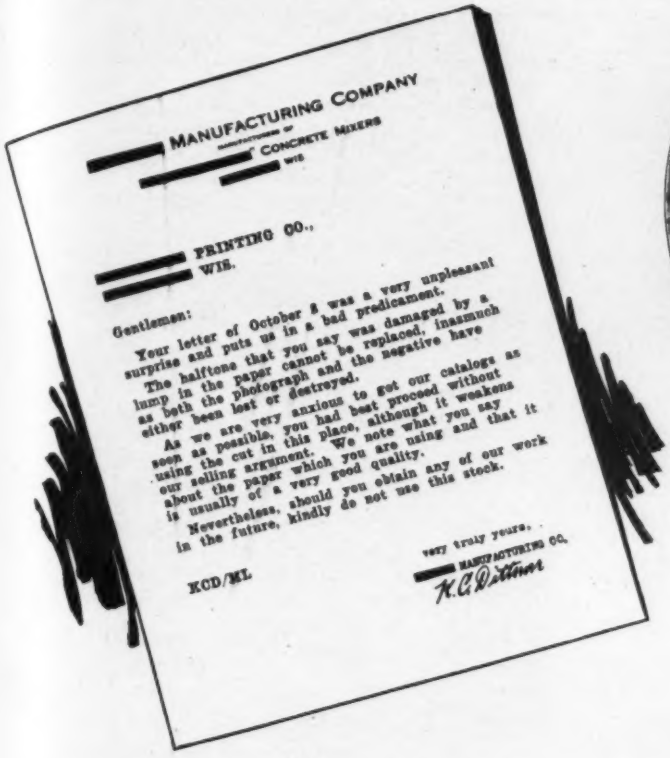
News Notes of the Trade

President Allen E. Whiting of the Whiting Patterson Company, since his return from an extended trip to the New England Mills has been confined to his home suffering from grippe but is again able to be at his desk.

Manager Allen Center of the Continental Paper Company, board manufacturers, with Philadelphia offices in the Bourse, is planning to take possession of his newly constructed home at Oakmont by Christmas.

A new two ton delivery Autocar Truck has been added to the shipping department of the Saxe Paper Company.

Carl C. Flynn, who is now representing the Mohawk Valley Paper Company of Little Falls, N. Y., made the rounds of the local trade with the mills line of high grade tissue manilas. Mr. Flynn is the newly appointed local representative for the mills.



MANUFACTURING COMPANY
MANUFACTURERS OF
CONCRETE MIXERS
WIS

PRINTING CO.,
WIS.

Gentlemen:

Your letter of October 8 was a very unpleasant surprise and puts us in a bad predicament. The halftone that you say was damaged by a lump in the paper cannot be replaced, inasmuch as both the photograph and the negative have either been lost or destroyed.

As we are very anxious to get our catalogs as soon as possible, you had best proceed without using the cut in this place, although it weakens our selling argument. We note what you say about the paper which you are using and that it is usually of a very good quality.

Nevertheless, should you obtain any of our work in the future, kindly do not use this stock.

Very truly yours,
MANUFACTURING CO.
K. C. Dittmer

KCD/ML

How *to* Discourage Printers *from* Using Your Paper

Read the above letter carefully. It explains itself. In this case a lump in a sheet of paper ruined an expensive halftone plate that could not be replaced. It, moreover, weakened the sales appeal of a catalog, resulted in a dissatisfied buyer of printing, and a disgusted and angry printer. *It will be a long time before he buys that particular stock again.*

Are you sure that the paper in question was not *yours?* And the experience of the printer may be more frequent than you realize.

Safeguard Your Customers Against Lumps *in* Paper

There is **one effective method** of doing it, that, at the same time results in a sheet of uniform caliper and of better formation and makes possible **increased production at a lower cost.**

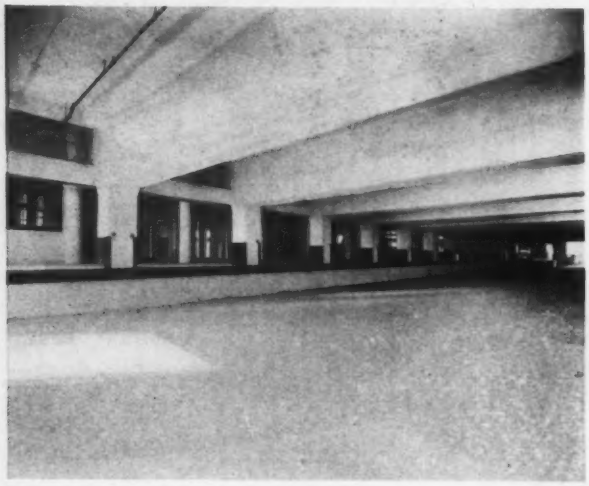
You can obtain these desirable results by installing a Voith High Pressure Stock Inlet on your Fourdrinier machine. Your copy of an attractive booklet is ready, giving full particulars regarding this remarkable new machine. It is fully illustrated and contains definite proof of all of the above statements.

Write for it today.

VALLEY IRON WORKS CO.
APPLETON, WIS.
New York Office: 350 Madison Ave.

NEW WAREHOUSE OF BLAKE, MOFFITT AND TOWNE

On October 10 Blake, Moffitt and Towne opened for formal inspection their new warehouse at 242 South Los Angeles street, Los Angeles, Cal. The new warehouse is one of the most up-to-date paper warehouses in the United States.



LOADING ARCADE INSIDE BUILDING

Area 30 x 216 feet. Entrance to Arcade in distance. Accommodations for 22 trucks at one time.

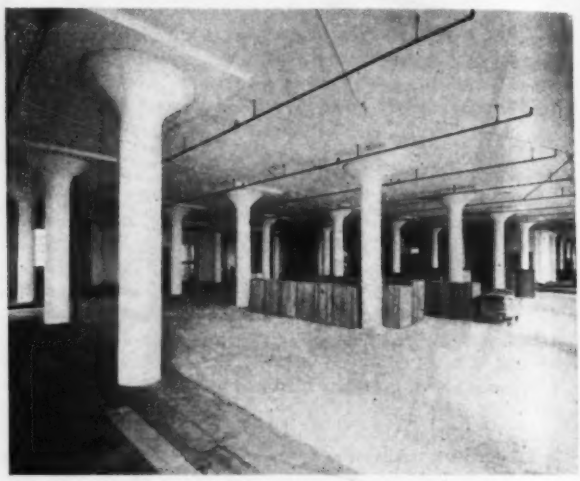
VIEW OF EAST FRONT OF BUILDING

Exits from loading Arcade to private alley. Also shows north side of building. Private alley of Western Wholesale Drug Company.

The building is four stories with basement, of concrete, steel and brick construction, and will give the concern 137,000 square feet of additional floor space, making a total of 252,000 square feet.

The history of Blake, Moffit and Towne as a California institution goes back to the early times in California. The San Francisco house was founded in 1855, and from that time to this has maintained its prestige as a house known for its fair and honorable dealing and the high grade of merchandise sold.

The Los Angeles house was started in 1890, succeeding Mr. George Cook, who, for a time represented Blake, Moffitt and Towne as their agent and later, when the stock of merchandise was taken over from him, becoming the first manager. Mr. Cook served for about three years and was succeeded by Mr. J. K. Moffitt, of



VIEW OF SECOND FLOOR

The second, third and fourth floors are duplicates and as yet contain practically no merchandise. Each of the five floors contain 27,500 square feet of space.

San Francisco. The entire force then numbered seven employees. Mr. Moffitt managed the business for almost two years, and then turned it over to his successor, the late Mr. E. H. Greppin, with a force of fourteen employees.

Mr. Greppin served as manager for a little less than twenty-eight years and through his splendid knowledge of the paper business and fair and honorable merchandising methods, he built the business up to its present status. Mr. Greppin died September 5, 1922. The splendid growth during his term of service is an evidence of his broad-minded policies and marked executive ability. The Los Angeles branch now carries upon its pay roll over three hundred employees and the policy of selling the best merchandise obtainable and the fair and considerate treatment of friends and patrons has not changed during the past thirty-five years.

O. F. Miller Co. Gets Contract

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., November 14, 1924.—The O. F. Miller Company of this city has been awarded the contract for the erection of a storage warehouse for the board mill of the American Can Company, located at Constantine, Mich. The new structure will be one story high and about 300 feet in length. It will be standard mill construction and will cost about $25,000.

The American Can Company, which for years took the product of the Constantine Board and Paper Company on a contract basis, has leased that plant for a period understood to be about ten years and will operate it during that period. The mill is in fine condition throughout and an economical one to run.

Michigan Board Men Meet

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., November 14, 1924.—There was a conference of Michigan board manufacturers Wednesday afternoon at the Park-American hotel.

While numerous manufacturing problems were discussed, it was largely a social gathering. The company included Harley Wood of the River Raisen Paper Company, Monroe; Lee Rauch of the Consolidated Paper Company, Monroe; L. W. Sutherland of the Sutherland Paper Company, Kalamazoo; Charles E. Nelson and S. B. Monroe of the MacSimPar Paper Company, Otsego; and A. L. Clark and J. F. Byrne of the Standard Paper Company, Kalamazoo.

The Brown Paper Mill Co., INC.

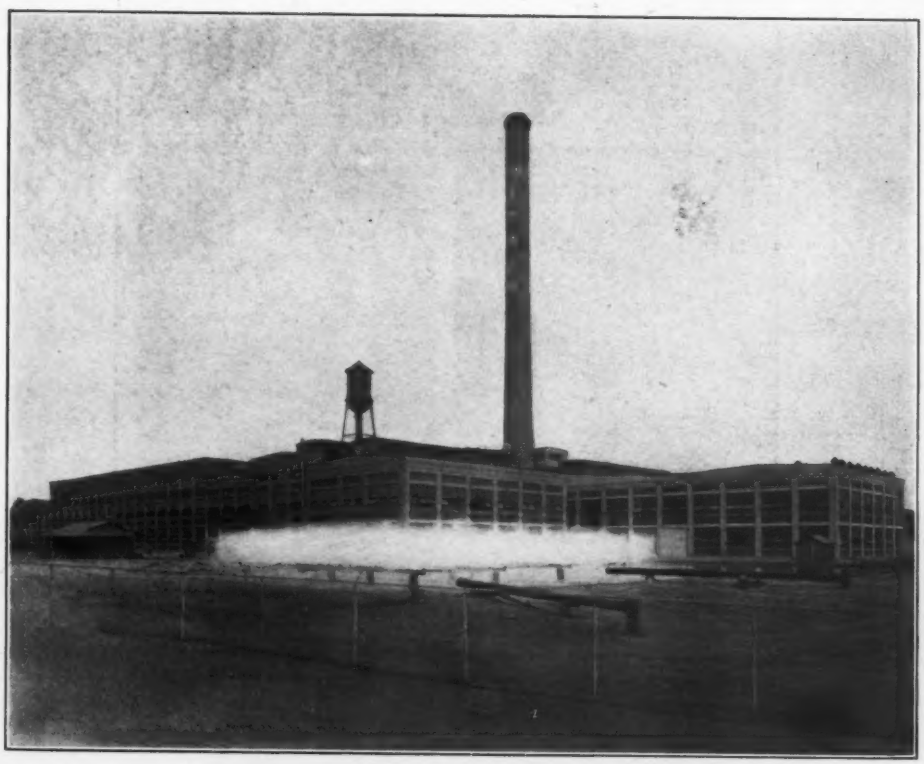
Manufacturers of

Kraft Papers

from

Southern Pine

MONROE, LOUISIANA



View of new plant from roadway, showing spray pond

COMPANY OFFICIALS

Top—H. LUTCHER BROWN—GEO. S. HOLMES
President Vice Pres. & Gen. Mgr.

Bottom—WALTER J. MEYER—BUNN BEASELEY
Sales Manager Superintendent

SOUTHERN ENTERPRISE

A $3,000,000 PULP AND PAPER MILL DEVOTED EXCLUSIVELY TO MAKING KRAFT PAPER FROM SOUTHERN PINE—EQUIPPED WITH LATEST DESIGNED AND SPECIAL MACHINERY—OWNED AND OPERATED BY MEN OF VAST EXPERIENCE IN PRODUCTION OF PULP AND PAPER

WITH the starting of operations of the new mill of the Brown Paper Mill Company, Inc., at West Monroe, Louisiana, the South has taken another step forward in its development as a leading industral section of the United States. This plant, representing an investment of over $3,000,000, is regarded as the most modernly equipped paper and pulp mill now in operation. It is the result of visualizing of opportunities by men experienced in the manufacture of paper and pulp, who are blazing the trail for the Southern states as industrial centers and especially as the situation relates to the paper and pulp industry.

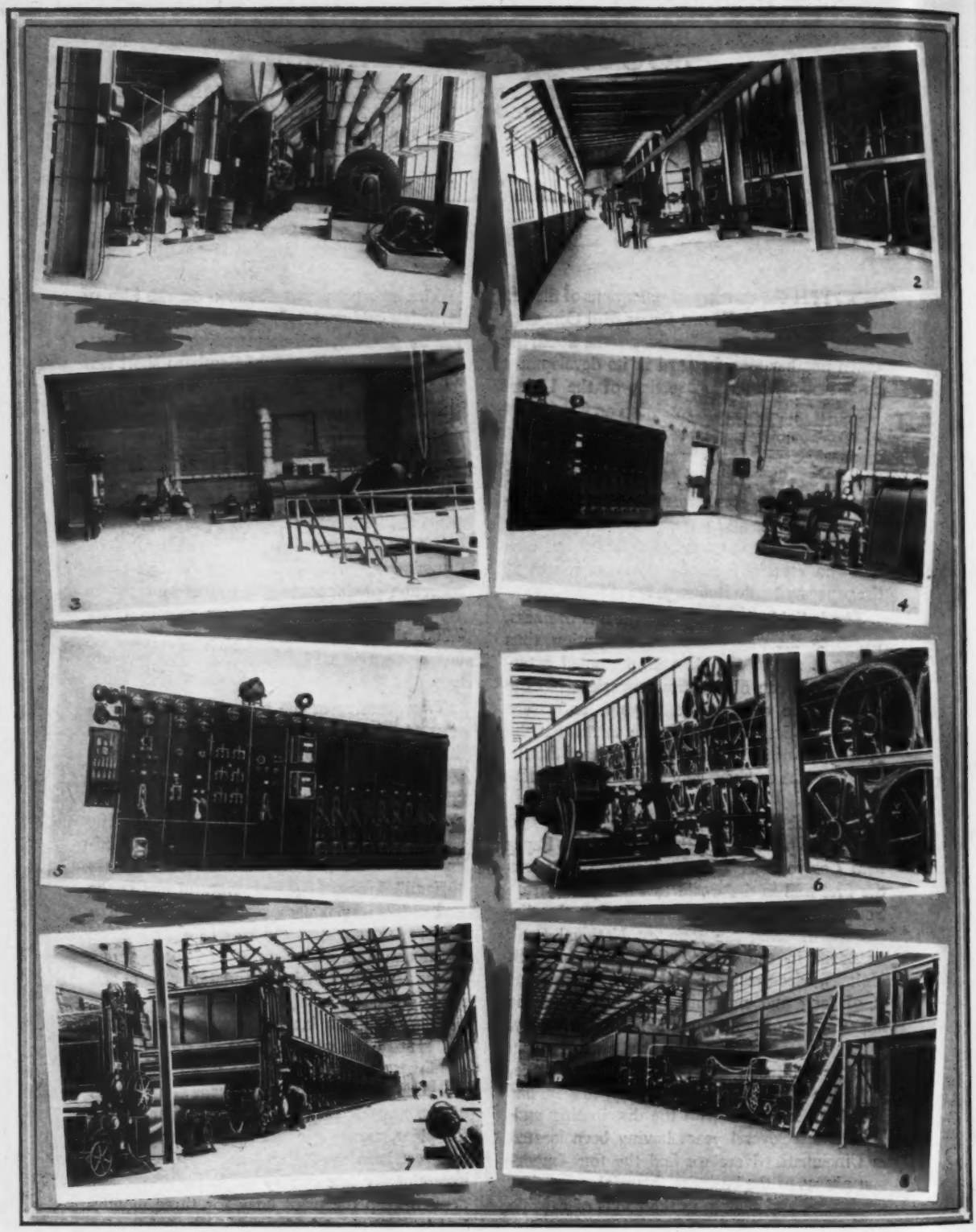
The individuals identified with this business, which by the way is a close corporation, thus taking it out of the class of promoted enterprises, are men of practical experience in the manufacture of paper and pulp, and were among the first to convince the world that the production of paper from pulp made of Southern pine was commercially practical and profitable.

H. Lutcher Brown, the president, is also active vice-president of the Yellow Pine Paper Mill Company at Orange, Texas, which was the first mill in the world to make paper from Southern pine. Mr. Brown also has the distinction of being the youngest National Bank president in the United States. George S. Holmes, vice-president and general manager, is of long and recognized experience in the manufacture of paper and pulp. Bunn Beasley, the superintendent, one might say was born in a paper mill, and has been in it ever since, while the sales manager, Walter J. Meyer, has long been identified with the distributing end, for the last several years having been located in Cincinnati. Here we find the four important phases of the business, financial, executive, production and selling, in the hands of capable men of experience.

The enterprise was founded on the idea of its being self-operated, self-sustaining, and so far as possible, self-perpetuating. The company owns 50,000 acres of Southern short leaf pine, and has available 100,000 acres of additional timberland. The pulpwood is transported over the company's own railroad which extends twenty-five miles into the heart of this timber tract. The water supply is derived from six artesian wells drilled 425 to 851 feet deep, while the fuel, natural gas, is piped from a gas belt located twenty-three miles distant. The company generates its own power, electrical operation predominating, the total horsepower of the synchronous and other motors being 7,200, the installation of the latest Westinghouse Electric and Manufacturing Company type.

Two features in the mill stand out in contrast to other mills, one being the elimination of a beater room and the other that there is not a pound of coal used in the generation of power, heat or steam. This has added to the cleanliness and attractiveness of the plant. The beating capacity is taken care of by four "Claflin" beating engines in conjunction with six "Miami" Jordan engines. Natural gas is the fuel fed to the boilers with the result that a uniform temperature can be easily maintained in the entire set of boilers, and the boiler room is free from the usual accumulation of coal and ashes.

There is much landscape work being done to beautify the surroundings of the mill and administration building, and when completed will make the property one of the show places of the South. At the time the writer visited the plant, two months ago, the paper machine had just been started and was turning out an exceptionally fine quality of "Kraft," and orders to keep the plant busy for three months had been received without the submitting of a



1. Sectional Motor Drive. 2. Direct Drive Machine Motors. 3 and 4. Bleeder Type Turbo Generator and Motor Control. 5. Motor Control System. 6. Individual Motor Drive. 7 and 8. Two Views of Machine Room.

sample of the product. The present daily production is 65 tons, and the plant is so designed as to have its capacity doubled without interfering in the least with its continuous operation. There are so many economical features in connection with the manufacture of the product of this mill, in addition to the quality of the product itself, that there is not the slightest question of its being continuously and successfully operated.

In the equipment of the mill there has been call for many specialties in the specifications. Although the general products manufactured by the concerns which participated in equipping this mill are recognized as standard lines, the equipment they furnished in this instance was designed to fit special requirements, and the result has been the elimination of cramped spaces, thus adding to the production efficiency.

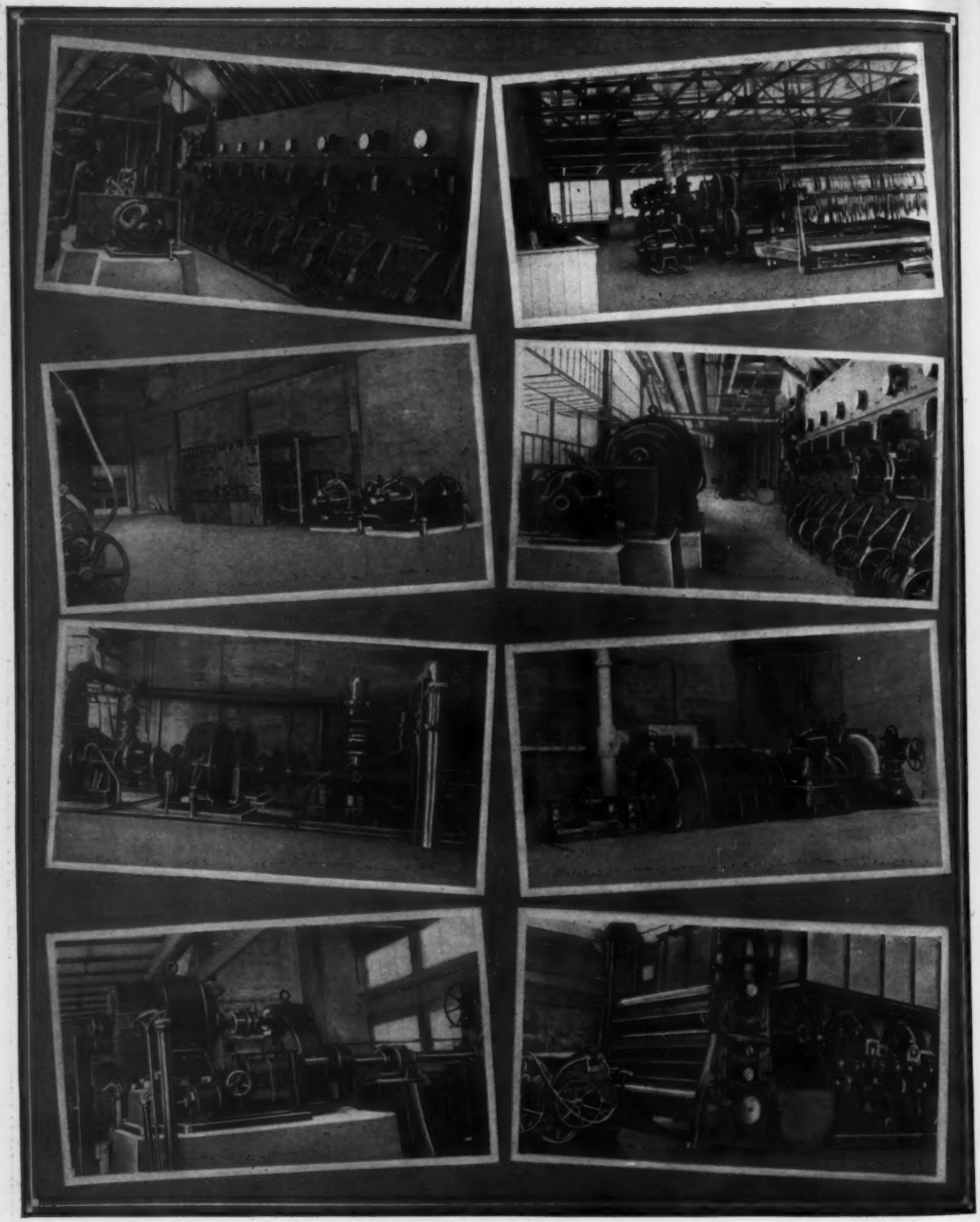
As the pulpwood is unloaded from the cars it is carried by Jeffrey conveyors to the Paulson Barker drums with a 20 cord capacity per hour made by the Manitowoc Engineering Works of Manitowoc, Wis., when, after being barked, it is automatically picked up by conveyors and carried to the wood room, where an 84-inch Carthage chipper chips the logs, the chips being screened by Ryther & Pringle screen, the larger chips being crushed by a Waterville Iron Works crusher. Here the chips are carried by Jeffrey bucket elevators to the chip bin and dumped into 4 Kellogg Rotary Digesters having a capacity of 1,350 cubic feet equal to 15 tons of chips, sufficient to produce three tons of paper per cook. With the digesters rotating the chips are cooked for two hours in a white liquor containing sodium hydroxide and sodium sulphide at a temperature of 320 deg. F., during which progress the roson, lignin and other matter is dissolved from the wood, leaving the cellulose or wood fibre.

Following this the stock is blown from the digesters into twelve diffusers or tanks made by Walsh-Weidner Company, where the spent chemicals are washed out, leaving only the fibre stock. The liquor is drained off and pumped by Worthington pumps to two storage tanks on the roof, which have a capacity of 80,000 gallons each. The stock remaining in the diffusers is then washed by a flow of cleaner liquor until titration shows the fibre containing less than one-half of one per cent of soda and the fibre is then washed with clean hot water.

The liquor pumped to the storage tank flows to the triple effect Zaremba vacuum evaporator, made by the Zaremba Company of Buffalo, New York, where is is evaporated to about 25 degrees Baumé. Then it is transmitted to four disc evaporators, made by the Manitowoc Engineering Works of Manitowoc, Wis., where it is further reduced to 35 degrees Baumé. Thus concentrated the liquor is passed to rotary incinerators, where, after becoming calcined, it emerges as a black ash or impure sodium carbonate.

The greater part of the evaporation takes place at the rear of the incinerator, where the liquor is fed through pipes, and as it approaches the heated section it catches fire and is discharged into smelting furnaces made of brick and manufactured by Harbison & Walker Refractories Company, where complete combustion takes place with the aid of a forced draft from blowers made by Wilbraham-Green Company of Pottstown, Pa. Sodium sulphate is added in the smelter furnaces to replace the soda lost in the process of recovery and the purified sodium carbonate flows in a molten state into dissolving tanks, making a green liquor of mixed sodium salts.

When this liquor becomes of sufficient strength for causticizing it is pumped to causticizing tanks and titrated to determine its alkaline strength. Burnt lime is added, and after causticization takes place, the liquor is pumped to settling tanks, fourteen of these being furnished by Walsh & Widener Company, where the white liquor is returned to the white liquor tanks for use again in the digesters, the lime sludge being pumped out as waste.



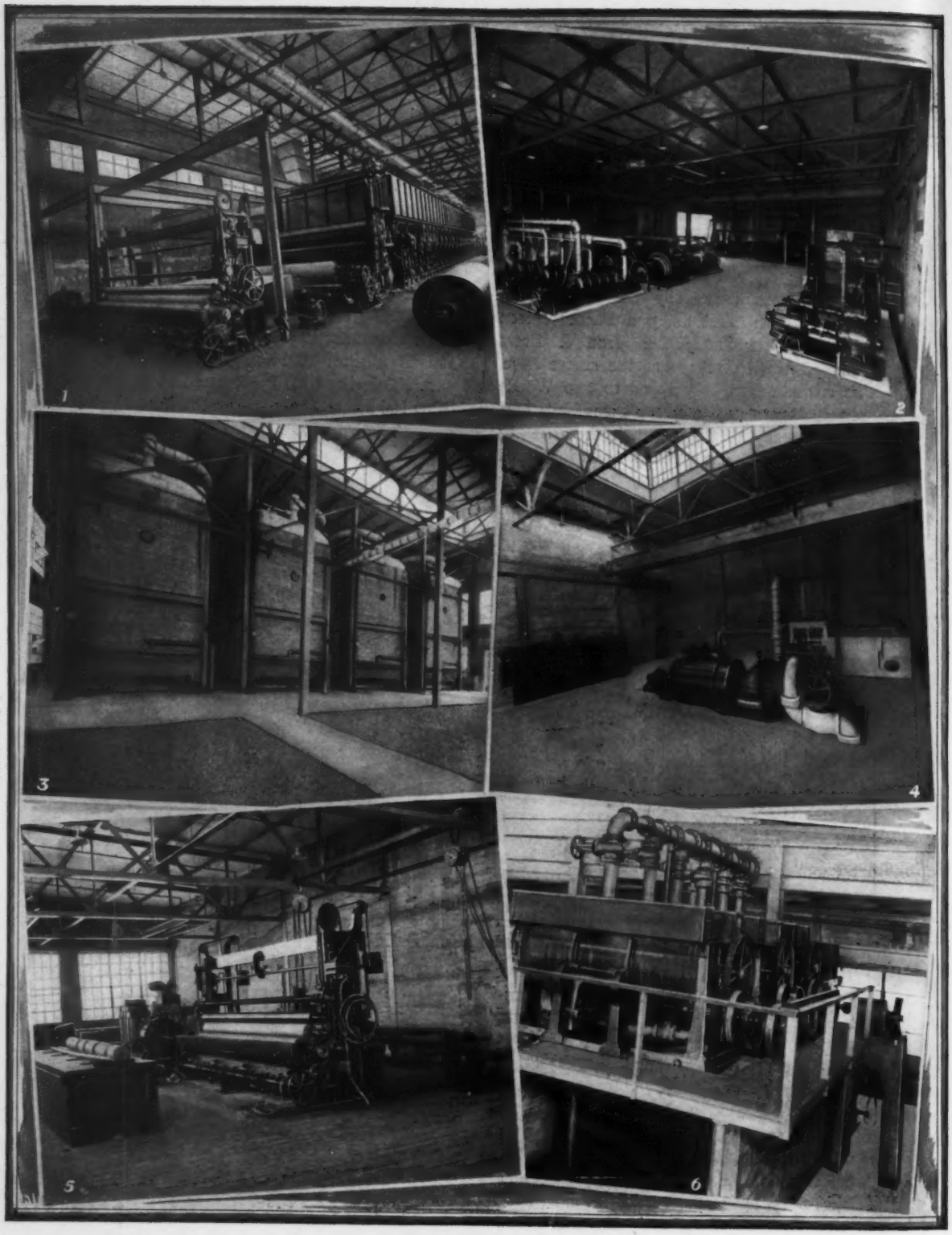
Top left—Machine Control Switch Board—Top right—Finishing room showing "Erie Lay Boy"—Center left—Synchronous Motor Switch Board—also "Claflin Continuous Beating Engines"—Center right—Bleeder Type Turbo Generator—Lower left—Machine Drive Motor—Lower right—Farrel Calendar stack.

After the fibre in the diffuser has undergone a washing process of four to five hours, the pulp is pumped to concrete tanks equipped with agitators (made by the Valley Iron Works) and washed along a Packer screen (made by the Sandy Hill Iron & Brass Works), which screens out the coarse fibre. The retained fibre is pumped to two Woods pulp thickeners (made by the Glens Falls Machine Company, thence by gravity is carried to the concrete stock chest, the agitators for which were made by Shartle Bros. Machine Company, then pumped to the Claflin stock chest, where it is fed to four Claflin beating engines (built by the Hermann Manufacturing Company of Lancaster, Ohio).

After this it is pumped to the Jordan chest, where it is refined by the Shartle "Miami" Jordon engines, six in number (all built by Shartle Bros. Machine Company). Here the stock reaches the machine chest, where it is pumped to the stock regulator and then passes on through the Bird rotary screen, made by the Bird Machine Company, and thence into the Fourdrinier wire.

The paper machine is the latest type Fourdrinier built by the Pusey & Jones Company, of Wilmington, Delaware, and is the largest paper machine today running on Kraft paper. It is 178 inches wide and arranged to carry a wire 176 inches wide by 80 feet in length. It trims 160 inches. It cost close to $250,000, and its installation was directed by Caesar McDowell, who has been associated with Pusey & Jones Company for nearly fifty years. The machine is equipped with "Millspaugh" couch roll 30 inches in diameter and press rolls (made by the Sandusky Foundry and Machine Company); six suction boxes built by the Beloit Iron Works of Beloit, Wis., and which are equipped with cycloidal vacuum pumps made by Wilbraham-Green Blower Co., of Pottstown, Pa. A Shean paper carrier, built by the Bagley & Sewall Company, is used for threading the paper through the dryers. There are 36 dryers, each 60 inches in diameter, 174-inch

The Administration Building



1—Slitter and Winder. 2—Claflin Continuous Beating Engines and Shartle "Miami" Jordans. 3—Badenhausen Boilers. 4—Bleeder Type Turbo Generator. 5—Langston Slitter (Finishing Room). 6 Bird Rotary Screen.

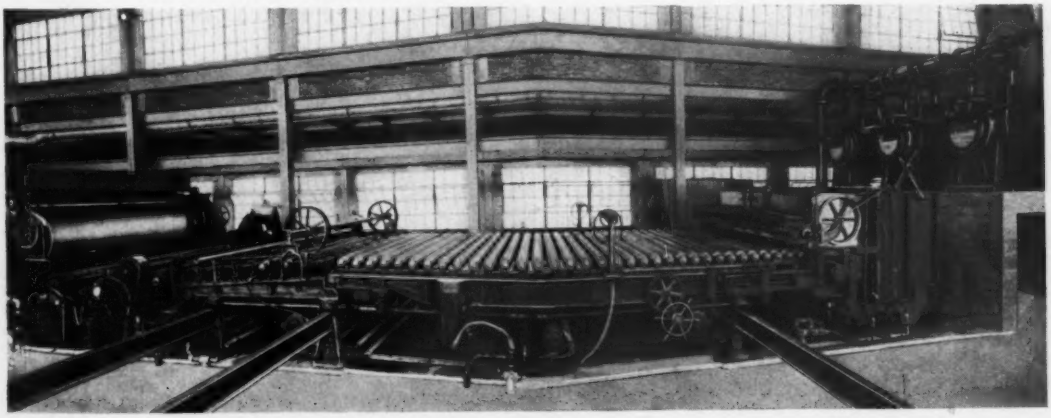
face. The steam condensate is removed from the wet end of the dryers by a condensate pump.

Owing to high humidity conditions in the summer, the heating and ventilating system for the machine room required very careful treatment. The system was designed and installed by the J. O. Ross Engineering Corporation. A central apparatus is located on the balcony back of the machine supplying air to the machine room, Jordan room, screen room and machine shop. The supply fan is driven by the variable speed motor and the fan speeded up or slowed down to suit outside conditions. The air supply is divided between the roof and under the felts as is usual practice in Ross machine room systems. Two exhaust fans connected to the machine hood are also driven by variable speed motors and furnish a positive method of exhaust for the vapor from the machine. Two Ross low power type unit heaters take care of heating the finishing room.

The calender stack, made by the Farrel Foundry and Machine Company, consists of six rolls 174-inch face varying in size from 18 inches at top to 28 inches at bottom, the latter weighing 16½ tons. The Warren calender doctors and Pope reels with 42-inch driving drum and two winding drums are used. The reels are wound to 15 inches thickness of paper and transferred to Langston winders, made by the Samuel M. Langston Company, and slit to desired width by Langston slitters.

In the finishing room is installed duplicate winders—an Erie Lay Boy (made by the Maxson Automatic Machinery Company) adapted to handling 12 rolls at once and an 84-inch "Seybold" trimmer (made by the Seybold Machine Company), a J. H. Horne & Son cutter, made by J. H. Horne & Sons, Inc. But one beater is installed in the plant, and this is in the basement where the broke is worked up in a Shartle continuous beater and pumped back to the Shartle "Miami" Jordans.

Probably the most interesting part of the equipment of this modern mill is its power plant. In the boiler room are installed four Badenhausen water tube boilers (made by Badenhausen Corporation, of Philadelphia, Pa.), with soot blowers and superheaters with thirty Kirkwood gas burners for each boiler. The fuel used being natural gas, it is possible to regulate the heat to any degree of temperature desired, 5,000,000 cubic feet of gas being consumed daily. This spot had a strong appeal to the writer because of the immaculate ap-



Showing Removable Fourdrinier of Paper Machine

pearance of the boiler room. The power plant generating equipment consists of a Westinghouse 3,750 KV-A bleeder type turbo generator and condenser and a 125 KV-A lighting turbine for use when a larger unit is not required. Exhaust steam up to 25 pounds pressure, sufficient to dry the paper and serve all low pressure requirements is derived from a low pressure stage of the automatic bleeder turbine.

Throughout the plant is installed Westinghouse equipment, over one hundred direct drive motors and starters being employed. The drive on the paper machine being a sectional drive consisting of a 850 h.p. 600 kw. synchronous motor generator set, three unit exciter set, eight sectional motors and controls.

The elevators installed were made by the Craig Ridgway & Son Company, of Coatesville, Pa. The pressure gauges used are made by the Schaeffer-Budenberg Company, of Brooklyn, N. Y., and the temperature gauges are made by the Foxboro Company, of Foxboro, Mass.

The mill 750 feet long and 300 feet deep, covering 2½ acres, was designed by George F. Hardy, 309 Broadway, New York City, N. Y., and erected under the supervision of M. C. McDonald, his resident engineer, who since the completion of the mill has become chief engineer for the Brown Company. The Morton C. Tuttle Company, of Boston, Mass., were the contractors for the plant and the administration building, the latter being of English architectural design, one story brick and slate structure.

The six artesian wells which supply water for this plant are known as the Layne well systems, and were drilled by the Layne & Bowler Company, of Memphis, Tenn. They range in depth from 425 to 851 feet and insure an almost endless supply of water for this mill.

It is becoming a recognized fact that an essential feature in the construction of paper and pulp mills is the character of the roofing. Non-conductivity is vitally important, not only as a protection against fire, but to prevent condensation within the building as well as to conserve the heat. The difference between interior and exterior temperatures will cause excessive condensation and ceiling drip. The roofing at this plant is what is known as the "Metropolitan" system of roofing, and was built by the Keystone Gypsum Fire Proofing Corporation of New York. Some of the features claimed for this roofing are its safety, its strength, its durability, its light weight, a smaller tonnage of steel being required, the absence of condensation, which tends to reduce the heating cost.

The production of the 156-inch trim Horne Duplex rotary cutter is automatically piled, jogged, counted and tagged by an Erie automatic Lay-Boy and Mamco counter and marker furnished by Maxson Automatic Machinery Company, Westerly, R. I. The "Erie" is the standard type of Lay-Boy used extensively throughout the trade. The "Mamco" is a recent development to overcome the uncertainty of metal-counting and hand-tagging. It can count reams or quires with mechanical accuracy and automatically insert tags in the piles at the completion of the desired count. Only two operators are employed to run above Horne-Erie-Mamco outfit, which lays a maximum of six piles, quire or ream counted.

An accomplishment worthy of recording here was the furnishing of the paper for the September 23, 1924, issue of the Monroe News-Star, an afternoon paper published at Monroe, La. This was the first time in the history of newspapers of this country, when the entire edition of a daily paper was printed on Kraft paper. Twenty hours before the publication was issued, the special weight Kraft made by the Brown Paper Mill Co., Inc., was in the form of pine logs and being unloaded at the doors of the mill. This paper was made when the paper machine had been in operation less than ten days.

WHY WE DON'T SELL LANGSTON BUILT EQUIPMENT ON TRIAL

FIRST: It's not on trial—its performance can be checked up by asking the man who uses it.

SECOND: We know, by experience, what it will do and what it will not do, and can and will give you a positive guarantee as to performance —both as to production and waste.

THIRD: You can't compare two machines by trying one. The difference is not that one will work and the other will not—but which will work best, and last longest.

With the aid of satisfied customers, we can let you make a just comparison between our own and any other make machine you have in mind, and in a much fairer way than trying one and judging the other.

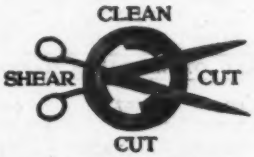
As to the life of the machine and the value received, just take the measuring stick used by engineers—The weight per dollar of cost—The specification of materials used, and the experience of manufacturer. This is the real measure of value.

WINDERS

Yours for Service
Sam Langston

REWINDERS

SAMUEL M. LANGSTON COMPANY

CAMDEN 

NEW JERSEY

Agents: Toronto Type Foundry Company, Toronto, Ont.
T. W. & C. B. Sheridan Company, London, E. C. I

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending September 30, 1924, and for the Nine Months Ended September 30, 1924, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER.

Paper and Manufactures of	September 1923 Quantity	September 1923 Value	September 1924 Quantity	September 1924 Value	Nine Months Ending September 30 1923 Quantity	Nine Months Ending September 30 1923 Value	Nine Months Ending September 30 1924 Quantity	Nine Months Ending September 30 1924 Value
Paper, except printed matter (total)	.....	9,664,829	.....	9,227,589	.....	86,075,741	.....	87,912,815
Printing paper—								
Standard news print.....lbs..Free	220,267,839	8,288,882	215,979,306	7,946,048	1,941,105,329	72,498,292	2,009,600,574	75,473,985
Imported from—								
Finland .....lbs.	5,318,195	180,216	3,138,473	105,707	67,671,628	2,233,690	54,566,251	1,709,733
Germany .....lbs.	10,002,847	336,409	2,677,021	83,063	77,406,452	2,546,768	66,607,932	2,026,460
Netherlands .....lbs.	.....	.....	219,409	7,547	3,793,555	132,973	1,794,537	56,773
Norway .....lbs.	8,550,124	284,264	5,701,642	173,558	57,998,115	1,993,509	20,758,889	673,512
Sweden .....lbs.	17,973,905	591,999	14,960,783	471,313	94,666,805	3,039,426	87,308,715	2,766,347
Canada .....lbs.	176,912,294	6,846,792	188,905,205	7,093,918	1,629,620,454	62,210,700	1,775,243,356	68,141,556
Other countries .....lbs.	1,510,474	49,202	376,773	10,942	9,948,320	341,226	3,320,894	99,404
All other, n. e. s. .....lbs..dut.	1,748,976	86,327	2,830,656	117,193	12,156,517	617,601	20,466,788	849,101
Grease-proof and water-proof papers.lbs..dut.	253,042	22,969	23,189	5,414	2,164,498	201,925	1,112,616	123,533
Wrapping paper .....lbs..dut.	5,759,654	262,096	.....	.....	66,162,100	2,957,570	.....	.....
Kraft wrapping paper.....lbs..dut.	.....	.....	1,133,299	43,451	.....	.....	22,391,323	860,202
All other wrapping paper.....lbs..dut.	.....	.....	1,343,493	51,435	.....	.....	18,045,522	694,037
Writing, drawing, bond, etc.....lbs..dut.	323,824	54,405	241,775	63,457	2,663,054	512,502	1,951,329	436,545
Surface coated .....lbs..dut.	95,150	22,153	122,846	45,977	829,378	237,370	1,318,870	323,122
Tissue paper .....lbs..dut.	180,238	74,478	176,751	64,180	1,490,680	718,008	1,662,906	691,716
Paper boards—								
Pulp boards in rolls.....lbs..dut.	7,016,842	199,253	5,431,966	143,619	64,349,594	1,823,362	59,883,767	1,660,955
Other paper boards, n. e. s. ....lbs..dut.	1,890,029	56,275	1,911,941	42,177	19,025,343	543,956	22,987,894	534,757
Cigarette paper, cigarette books and covers .....lbs..dut.	590,186	151,151	423,139	113,940	8,858,537	2,333,826	7,245,844	1,916,249
Photographic paper .....lbs..dut.	225,949	59,696	483,946	92,998	1,505,862	332,067	2,714,510	545,105
Hanging paper .....lbs..dut.	870,370	45,283	2,482,113	61,343	6,396,616	376,443	10,505,339	453,930
Paper boxes .....lbs..dut.	.....	.....	165,981	116,164	.....	.....	1,269,705	788,910
Decalcomania, not printed.....lbs..free	31,541	7,537	43,757	9,417	288,306	74,402	352,335	83,776
All other .....dut.	.....	334,324	.....	310,776	.....	2,848,417	.....	2,476,892
Books and other printed matter (total)	.....	748,019	.....	1,076,684	.....	6,474,444	.....	7,057,359
Books and pamphlets in foreign languages .....lbs..free	163,665	81,813	234,679	152,998	1,137,617	746,604	1,742,947	1,043,653
Books, maps, music, etc., 20 years old .....lbs..free	27,850	173,720	20,300	267,731	264,620	1,253,808	271,579	1,261,854
Other books, etc.....lbs..free	140,985	92,816	233,900	192,873	1,724,280	1,247,913	1,780,933	1,251,605
Books, pamphlets, and music, n. e. s.lbs..dut.	252,196	179,026	266,274	190,018	2,122,950	1,704,289	2,447,120	1,692,520
Maps, charts and other printed matter, n. e. s.....dut.	.....	53,628	.....	80,223	.....	487,792	.....	618,524
Lithographically printed matter, n. e. s.....								
Cigar bands, labels and flaps...lbs..dut.	16,097	20,619	9,172	14,082	202,982	161,036	87,794	111,954
Decalcomanias .....lbs..dut.	18,407	24,561	22,828	34,566	125,225	181,713	195,408	274,770
All other .....dut.	.....	121,836	.....	144,193	.....	691,289	.....	802,479
CRUDE PAPER STOCK.								
Rags for paper stock.....lbs..free	34,064,787	543,052	55,392,289	1,322,789	290,917,528	5,209,080	359,420,818	7,797,959
Waste, bagging, waste paper, etc..lbs..free	10,949,683	127,056	12,132,596	144,776	103,933,742	1,439,462	80,240,733	932,776
Old rope and all other paper stock.lbs..free	5,387,068	236,120	8,694,451	399,122	78,561,618	3,522,068	74,572,433	3,922,877
WOOD PULP.								
Mechanically ground .....tons..free	22,802	830,462	21,899	672,944	185,045	6,387,453	145,240	4,874,310
Chemical wood pulp—								
Sulphite, unbleached.....tons..free	36,092	2,230,136	55,934	2,952,021	344,790	19,469,519	389,553	20,934,545
Sulphite, bleached.....tons..free	17,694	1,570,627	25,676	1,971,948	188,399	16,852,227	195,433	15,217,619
Total sulphite .....tons	53,786	3,800,763	81,610	4,923,969	533,189	36,321,746	584,986	36,152,164
Imported from—								
Finland .....tons	5,495	351,182	7,532	387,133	57,292	3,252,088	45,239	2,357,779
Norway .....tons	6,156	504,593	9,474	627,270	53,109	4,185,369	39,023	2,799,751
Sweden .....tons	18,401	1,247,170	31,037	1,728,622	154,120	9,507,555	203,460	11,599,636
Canada .....tons	19,558	1,411,072	24,422	1,619,701	220,979	16,098,261	234,569	15,624,071
Other countries .....tons	4,276	286,746	9,145	561,243	47,689	3,278,473	62,695	3,770,927
Sulphate pulp, unbleached (kraft pulp) .....tons..free	20,222	1,360,643	32,001	1,786,001	171,483	11,216,070	203,275	11,721,764
Imported from—								
Finland .....tons	455	27,726	.....	.....	12,677	731,971	9,374	451,208
Norway .....tons	833	58,495	1,848	98,761	6,158	354,772	9,570	477,466
Sweden .....tons	8,977	587,824	19,240	993,392	54,393	3,311,321	86,384	4,592,021
Canada .....tons	9,934	685,292	10,430	674,013	96,951	6,724,379	95,326	6,068,773
Other countries .....tons	23	1,306	483	19,865	1,304	93,627	2,621	132,296
Sulphate pulp, bleached.....tons..free	1,140	78,156	4,559	251,859	13,360	927,057	15,255	851,519
Other pulp .....tons..free	1,591	93,880	200	13,827	4,938	304,082	1,588	90,482
CHEMICALS AND OTHER PAPER MAKERS' MATERIALS.								
Colors, dyes, stains, color acids, and color bases, n. e. s.....lbs..dut.	173,978	227,936	267,506	340,007	2,410,360	3,178,761	2,228,247	2,726,205
Imported from—								
France .....lbs.	16,093	18,349	7,431	12,514	116,180	177,441	88,654	129,907
Germany .....lbs.	78,213	99,452	116,629	150,477	1,171,941	1,376,085	1,067,318	1,225,926
Italy .....lbs.	17,527	23,864	8,757	14,143	297,193	423,063	114,545	156,821
Switzerland .....lbs.	44,677	64,467	120,885	146,048	654,418	994,480	739,895	953,723
United Kingdom.....lbs.	13,260	15,000	5,800	7,314	81,285	81,936	60,546	59,196
Other countries.....lbs.	4,208	6,804	8,004	9,511	88,743	125,756	157,289	200,632
Casein or lactarene.....lbs..dut.	675,837	108,744	1,096,557	75,620	22,587,873	3,903,209	13,971,159	1,110,923
Kaolin, china, and paper clay....tons..dut.	20,367	223,177	23,417	246,432	216,243	2,408,856	239,898	2,476,038

(*Continued on page 70*)

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PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 68*)

EXPORTS—PAPER.

Paper and Manufactures of	September 1923 Quantity	September 1923 Value	September 1924 Quantity	September 1924 Value	Nine Months Ending September 30 1923 Quantity	Nine Months Ending September 30 1923 Value	Nine Months Ending September 30 1924 Quantity	Nine Months Ending September 30 1924 Value
Paper, except printed matter (total)	.....	2,014,834	.....	1,952,044	.....	19,446,030	.....	18,348,018
Printing Paper—								
News Print Paper.....lbs.	2,388,067	112,953	1,815,802	97,008	24,063,737	1,220,807	25,359,369	1,305,498
Exported to—								
Canada	99,433	8,618	48,603	4,763	819,263	75,914	786,937	62,456
Central America	106,783	5,389	23,170	1,159	1,034,154	53,303	522,998	28,970
Mexico	161,499	6,810	309,598	18,994	986,648	66,486	1,951,368	103,272
Cuba	1,366,168	58,461	863,335	42,213	15,109,184	696,387	14,234,627	647,893
South America	145,466	7,840	165,509	7,483	1,410,412	74,185	1,699,822	95,209
Japan	98,538	6,214	49,810	4,765	682,971	45,096	580,087	40,778
Philippine Islands	329,235	15,681	288,587	12,824	3,336,903	163,606	3,052,780	148,586
Other countries	80,945	3,940	67,190	4,807	684,202	45,830	2,530,750	178,334
Book paper, not coated.....lbs.	2,010,098	237,487	2,157,093	222,270	21,288,809	2,380,811	12,880,900	1,492,854
Exported to—								
United Kingdom	47,098	9,663	7,023	1,186	447,984	99,643	686,349	134,553
Canada	159,652	19,233	82,915	12,435	1,753,804	224,821	1,325,376	172,005
Central America	42,711	4,623	78,506	9,310	668,160	74,765	460,409	50,918
Mexico	72,262	12,101	253,955	28,113	1,561,225	178,603	1,286,657	143,133
Cuba	484,245	48,408	299,234	34,963	5,841,201	620,679	2,638,463	298,633
Argentina	55,384	11,591	12,861	1,987	817,145	111,093	544,451	51,113
Brazil	60,703	9,339	85,593	10,533	721,222	79,746	278,764	37,500
Venezuela	52,726	6,987	18,310	2,308	275,135	40,138	412,741	45,495
Other South America	111,494	12,721	118,914	14,692	1,329,843	142,328	743,452	90,296
British India	1,024	112	11,547	1,233	198,601	22,596	70,952	9,143
China	120,005	11,877	891,580	76,163	1,712,280	183,726	1,897,477	181,756
Japan	304,967	36,342	8,827	1,080	1,907,027	177,456	383,265	46,655
Philippine Islands	315,264	23,993	163,753	13,162	2,683,461	247,577	942,257	83,361
Australia	113,841	21,025	50,128	5,634	730,324	92,428	402,464	45,452
Other countries	68,722	9,472	73,947	9,471	641,397	85,212	807,763	102,841
Cover paper.....lbs.	66,260	10,163	57,851	12,576	858,612	151,711	570,224	104,882
Greaseproof and waterproof paper.....lbs.	152,466	21,027	48,410	8,186	1,256,008	165,294	1,234,734	142,188
Wrapping paper—								
Kraft paper.....lbs.	51,186	6,766	48,091	8,387	573,746	52,660	442,297	54,201
Other wrapping.....lbs.	1,991,467	161,624	1,886,837	140,360	19,785,911	1,590,363	17,704,979	1,450,263
Writing paper, except papeteries.....lbs.	425,269	80,139	327,343	58,556	4,743,774	771,555	3,522,915	557,427
Surface-coated paper.....lbs.	153,382	24,608	278,203	44,073	3,079,820	474,093	2,536,132	393,150
Tissue and crêpe paper.....lbs.	303,674	83,587	248,370	78,748	2,407,803	602,025	2,143,748	562,608
Toilet paper.....lbs.	260,140	28,601	260,373	34,117	3,819,893	448,041	3,065,834	360,413
Paper towels and napkins.....lbs.	79,407	17,762	103,592	21,376	865,285	142,945	1,077,205	172,173
Bristols and bristol board.....lbs.	250,269	18,629	35,966	4,190	1,706,150	138,504	689,667	88,033
Paper board and straw board.....lbs.	4,811,107	217,386	5,768,827	188,514	42,888,852	2,066,371	57,131,179	2,238,023
Sheathing and building paper.....lbs.	150,625	6,241	639,342	35,651	2,514,447	117,284	3,936,734	188,843
Wall board of paper or pulp.....sq. ft.	1,389,172	57,005	1,032,570	40,184	11,162,684	418,463	13,162,677	446,352
Blotting paper.....lbs.	.....	.....	165,304	18,952	.....	.....	1,771,830	219,025
Filing folders, index cards and other office forms.....lbs.	.....	.....	33,128	11,003	.....	.....	336,119	121,339
Cigarette paper and books.....lbs.	102,206	45,299	77,387	27,414	412,826	139,840	731,280	262,081
Photographic paper.....lbs.	134,983	121,133	142,172	124,361	1,090,287	1,109,950	1,242,021	1,274,227
Paper hangings (wall paper).....yard	1,223,190	29,200	1,260,295	34,413	16,382,980	428,021	18,163,268	476,520
Paper bags.....lbs.	625,711	72,682	1,008,664	80,941	6,703,772	650,281	7,850,415	737,132
Boxes and cartons.....lbs.	1,021,018	96,219	1,223,091	109,968	8,283,363	776,532	10,041,589	841,933
Carbon paper.....lbs.	71,346	56,185	78,974	61,904	653,025	514,560	683,398	535,515
Envelopes.....lbs.	267,306	55,493	175,921	35,168	2,107,589	412,496	1,773,183	356,135
Playing cards.....pack	432,031	44,734	664,050	66,954	7,596,246	903,143	4,832,085	535,727
Cash register and adding machine paper..lbs.	72,803	9,095	124,379	13,961	837,167	90,651	889,981	101,327
Papeteries (writing paper in boxes)....lbs.	38,579	12,887	71,202	25,056	330,544	123,013	318,172	118,716
Other paper and paper products, n.e.s..lbs.	2,627,609	387,929	3,366,591	347,753	26,257,125	3,656,616	28,426,452	3,211,439
Books, maps, pictures, and other printed matter (total).....lbs.	4,516,409	1,610,892	4,617,545	1,776,264	35,888,648	12,791,137	40,293,663	14,355,985
Books and pamphlets.....lbs.	2,553,655	774,305	3,068,069	1,000,465	19,019,627	6,238,946	24,572,737	7,310,554
Maps and charts.....lbs.	12,886	15,247	20,610	14,657	144,527	125,893	122,724	118,799
Music in books or sheets.....lbs.	39,744	25,736	51,086	36,827	403,564	259,257	480,725	294,425
Souvenir post cards.....lbs.	126,702	45,041	24,160	20,440	529,943	168,518	272,624	140,791
Lithographically printed matter, except post cards and maps.....lbs.	174,453	126,215	207,609	207,668	1,506,759	1,121,167	1,673,478	1,463,748
Other printed matter.....lbs.	1,608,969	624,348	1,246,011	496,207	14,284,228	4,877,356	13,171,375	5,027,668

WOOD PULP AND PAPER STOCK.

Sulphite wood pulp.....tons	1,744	101,154	1,836	113,722	11,172	651,791	14,725	885,094
Soda wood pulp.....tons	281	28,587	90	8,637	2,885	278,299	1,172	109,588
Other wood pulp.....tons	1,372	58,249	740	91,254	2,608	131,507	3,835	381,313
Rags, and other paper stock.....lbs.	10,581,190	169,621	9,462,356	194,573	80,178,540	1,414,568	95,735,017	1,636,411

PAPER AND PULP MILL MACHINERY.

Paper and pulp mill machinery.....lbs.	714,342	153,217	466,606	83,983	10,187,592	1,684,855	7,949,598	1,626,208

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Editorial

Vol. LXXIX New York, November 27, 1924 No. 22
HENRY J. BERGER, Editor

PUBLIC EMPLOYMENT SERVICE

Some interesting facts are disclosed in an exhaustive report on "Public Employment Offices—Their Purpose, Structure, and Methods," which has just been issued by the Russell Sage Foundation as the result of an investigation started in 1919.

The report, which is based on a study extending into almost every state in the Union and into Canada and England, was prepared by Shelby M. Harrison, Director of the Department of Surveys and Exhibits of the Russell Sage Foundation in Collaboration with Mary LaDame, Bradley Buell, Leslie E. Woodcock, and Frederick A. King, all of whom have been closely identified with public and private employment work. Copies of the report may be secured at the headquarters of the Foundation, 130 East 22nd street, New York.

Among other things the report says:

"A public employment service is designed to serve both employers and workers, but until recently it has been accepted as of more vital need to workers than to employers, inasmuch as unemployment is far more devastating to workers than shortage of labor to employers. Experience has indicated, however, that an employment service whose dominant objective is service to workers will play a comparatively insignificant rôle in the world of labor. Without the wholehearted support of employers, the service cannot fulfill its purpose."

The Foundation's report recommends the establishment of a nation-wide system of public employment offices, in which the fed, eral, state, and local governments would co-operate, and which would be administered under a board made up of the Secretary of Labor, the Secretary of Commerce, and the Secretary of Agriculture, with the assistance of a national advisory council and local committees representing employers and employes. Such an administration, the report says, "ought to insure beyond the possibility of doubt a genuinely nonpartisan employment service."

Other outstanding facts in the report follow:

"Employers are either indifferent or suspicious of private employment agencies as a class, while workers—both organized and unorganized—are definitely hostile. Most of the employers interviewed regarded private agencies as a last resort for getting workmen.

"Organized labor has long been opposed to the private employment bureaus, charging that they are used as strike-breaking agencies, that they favor the employer, and that their sole purpose is to exploit the worker.

"Southern states, in an effort to restrict the emigration of negro labor to the north, are through legislation and license fees making it increasingly difficult, and in some states impossible, for private agencies to send workers out of the state.

"Some of the employment bureaus operated by employers' associations, boards of trade, and similar organizations are being operated chiefly, if not exclusively, in the interests of employers who desire to control the means through which contracts between the worker and the job are made, and who feel that these bureaus foster their interests in other important related maters.

"Some trade unions have similarly set up bureaus which seek to keep members of the union employed and which may be of service in placing men in plants where they can help the cause of unionism.

"The use of newspaper want advertisement columns as a means of securing employes has become practically universal, but the advantages of this method are almost wholly on the side of the employer.

"Public sentiment favorable to a public employment service has been increasing for twenty years or more, the two most important reasons for this sentiment being the belief that an efficient public employment service will tend to eliminate the abuses of private fee-charging agencies and that it will reduce the evil of unemployment.

"The report traces the history of our experience with municipal, states, and federal administrations of public employment offices, and finds that the evidence is strongly in favor of making the state the chief unit of administration in a combined federal-state-local service. The report recommends that the states take the responsibility for all placement work, and the federal government render services of a general character, such as the development of uniform records and statistics, and the interstate or regional clearance of workers and of information regarding labor supply and demand.

"The transfer from one section of the country to another of workers or of men going to new jobs in increasing numbers is an uprooting of home and community relationships that must be looked upon with concern. In the past we in the United States have talked very loosely about shipping men from one part of the country to another, as though they were merely cattle or commodities; and as though the desirability of shipment from an industrial and social point of view were unquestioned.

"The orderly recruiting and distribution of farm labor is one of the biggest problems confronting public employment offices. It must be admitted, however, that in spite of the importance of this need, public employment offices have thus far largely failed to function in this field. With few exceptions, and not until the labor shortage created by the war had brought this situation forcibly before the country, were the farmers' interests served in more than limited areas adjoining industrial centres. The success obtained under wartime conditions, however, has been seriously endangered by the crippling of the federal service."

After discussing the numerous criticisms directed against the existing United States Employment Service, the report says:

"Any judgment of the performance of this Service must take into consideration the fact that it was first and foremost a war emergency organization, projected at the eleventh hour and shot up in reckless speed. Notwithstanding the gigantic handicaps which the Service encountered, it has not been without its positive contributions. In the first place, it has given to the people of this country an insight into the possibilities not only of local employment offices, but also of a nation-wide service.

"There are in the United States, according to the best available estimates, from two to three million migratory workers, mostly unskilled, and frequently shifting from one type of work to an-

other. These men, comprising the labor reserves of the lumber, railroad, construction, and agricultural industries, present a special and difficult problem. Private fee-charging employment agencies have found in the migratory worker an easy prey for exploitation. A more intelligent distribution of migratory workers, according to the needs at different times of the various sections of the country or of the industries, such as could be effected by an efficient national public employment service, would be of great benefit to this large group of workers, to industry, to the nation generally, and to the particular communities in which migratory workers congregate in large numbers.

"Protection of the interests of workers under the age of 21 constitutes a special problem for employment offices. Because of the numerous blind-alley jobs into which younger persons are attracted, and the frequent shifting about from one occupation to another, the importance of intelligent vocational guidance to this large group, from the standpoint of the community and the nation as well as that of the junior workers themselves, cannot be overemphasized.

"The casual workers—longshoremen, odd-job and handymen, unskilled building laborers, and women day-workers—are the first to feel the evil effects of an industrial slump, and to them loss of work usually means actual want. Casual work is the last refuge of the incompetent, the disabled and almost unemployable; its effect is degrading, physically and morally; and it makes difficult a return to regular employment. A central pooling and distribution of casual labor should help to reduce the number of casual workers by directing them into occupations where more regular employment is possible.

"Both employers and the public have thus far failed to recognize the possibilities for regular employment of handicapped workers—the aged, the blind, deaf, crippled, and persons recovering from organic troubles, such as tuberculosis, heart, mental, and nervous diseases. The public employment office, because of its specialized knowledge of general industrial conditions, and the wide choice of occupations afforded, can be of material aid in placing these persons. The public employment agency, moreover, would be welcomed by the workers themselves, many of whom hesitate to ask assistance of charitable and philanthropic agencies.

"The evils of private fee-charging employment agencies bear most heavily upon the non-English speaking foreigner and tend to nullify largely our efforts to Americanize. The employment needs of the newly arrived immigrant, and the interests of industry and of the nation would be better served by a national public employment system with branches in the immigrant centres of large cities and distributing channels leading to cities and states throughout the country."

POWER SHOW OPENS DECEMBER 10

The increase in industrial activity which is expected during the coming year will require more power, greater economy in the use of fuel and more efficient mechanical devices. The coming Power Show furnishes an excellent opportunity for manufacturers and engineers to inspect the latest developments; compare the relative merits of competing articles and meet the representatives of their builders under the most favorable conditions. The coming Show, the third in the series of the National Exposition of Power and Mechanical Engineering held in the Grand Central Palace, will occupy over 150,000 square feet on three floors and nearly 400 exhibitors will be represented. It will continue from December 1 to December 6.

The material to be exhibited will include all types of apparatus for the combustion of fuel and the generation of power in central stations, in industrial plants and in large office and apartment buildings. In addition there will be feature exhibits of materials handling equipment, machine tools, refrigerating machinery and heating and ventilating apparatus. There will be a large section of the Exposition devoted to mechanical power transmission with showings of the novelties in ball bearings, belting and gearing. The complete treatment of power and mechanical apparatus at the Show makes a strong appeal to the architect, the engineer and the manufacturer.

The Power Show is under the management of International Exposition Company, with Charles F. Roth and Fred W. Payne, Managers, with offices in the Grand Central Palace.

Freight Agents at Kalamazoo

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., November 22, 1924.—The Grand Trunk Railway Freight Agents Association assembled in Kalamazoo Thursday and Friday, all sessions being held in the Parchment community house, while members of the organization were guests of the Kalamazoo Vegetable Parchment Company at a dinner served Thursday evening and at Friday's luncheon.

The feature of the gathering was the dinner program, which was attended by about 100, including an excellent representation along the line of the road. Talks were given by James Caldwell, president of the Grand Trunk Railway Agents Association and agent at Chicago; Assistant Treasurer Hotchkiss, Detroit; W. R. Eastman, assistant general passenger agent, Detroit and Jacob Kindleberger, president of the Kalamazoo Vegetable Parchment Company.

Mr. Kindleberger declared the public generally is in sympathy with the railroads in the adjustment of the problems confronted today and will continue to be as long as the roads maintain a reasonable attitude and attempt no drastic rate advances.

Guy Hazen, president of the Kalamazoo Traffic Club acted as chairman of the meeting and introduced Earl S. Weber, secretary of the Chamber of Commerce as toastmaster. Don. McDowell led the singing.

The visitors were given opportuinty to inspect the plant of the Kalamazoo Vegetable Parchment Company.

French Pulp Consumption

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 26, 1924.—The pulp consumption of the French paper mills is estimated at 350,000 metric tons of mechanical pulp and 295,000 tons of chemical pulp annually according to American consul Memminger at Bordeaux reporting to the Department of Commerce. National pulp production the report says does not exceed 90,000 tons of each.

Places Contract with Austin Co.

The Robert Gair Company has placed a contract with the Austin Company for the erection of a 7,000 ton waste paper stock house to take the place of their stock sheds destroyed by a recent fire. The stock house will be equipped with overhead cranes. There will be railroad tracks on all sides. Karl A. Lefren of New York is Consulting Engineer.

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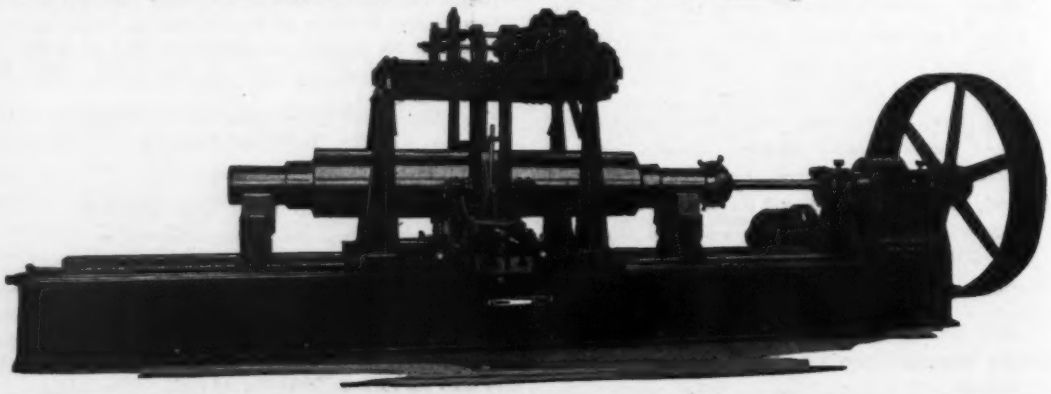

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LOBDELL Micrometer Calipers are handy and accurate.

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Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

STREAM POLLUTION STUDIES*

State of New Hampshire

"With regard to the situation in New Hampshire respecting the disposal of pulp and paper mill wastes, I would advice that thus far we have no special legislation covering this matter, nor has there any investigative work been done along this line."

State of New York

"With regard to legislation affecting stream pollution by paper mills, in general it may be said that the pollution of streams by any manufacturing waste is forbidden in this State if it creates a public nuisance or if it is injurious to fish or fish life.

"For some years I conducted a study of stream pollution, which was being made by the Conservation Commission and which has now been discontinued. We did not make any special study of paper mill pollution, although it is one of the most serious in this State. It has already been rather intensively studied by the federal government and it seemed to me that it was preeminently a type of stream pollution which must be cured by conservation measures and by-product utilization processes developed by the industry itself, which conclusions I believe are quite in line with the recommendations of your committee.

"In closing I might say that the wastes from the paper industry proper are not of the most serious moment, although they sometimes cause trouble. Wastes from the pulp industry, particularly the sulphite process, are highly injurious and destructive.

State of West Virginia

"I am glad to note the activity of your bureau in directing the thoughts of paper mill managers to the advisability of decreasing the stream pollution from these wastes as far as possible. More and more the question of prevention of stream pollution is coming to the attention of the state health departments and we are trying to direct the enactment of laws which give justice to all. However, the turning out of objectionable manufacturing wastes from tanneries and paper mill plants will eventually bring about drastic laws unless there is a reasonable amount of purification of the wastes before being discharged into the stream, particularly in those cases where gross nuisances and damage to public water supplies are brought about."

Can Satisfactory News Print Be Made from Hardwoods

At the conference on Utilization of Forest Products held in Washington last week, the programs were printed on paper which resembled standard newsprint paper in its general appearance although somewhat heavier in weight and with a harder surface. One of the pages carried the statement:

"Compare the paper upon which this program is printed with your newspaper. The paper used here is made entirely from black gum, and has not been bleached. Nine-tenths of a cord produce one ton of this paper, as compared with 1.2 cords of spruce required to produce a ton of newsprint by the usual processes. Similar satisfactory results have also been obtained with poplar and birch.

"This product, and the process by which it was made, are still in the experimental stage. Nevertheless, the high yield and the excellent natural color of the pulp give promise that such broadleaf woods as aspen, birch, beech, maple, black and tupelo gum, and cottonwood may be used profitably in the manufacture of newsprint to supplement the rapidly diminishing supply of spruce, which is at present practically the only species considered suitable for news print.

"Many of these broadleaf woods have only limited uses as lumber, hence their utilization for pulp would be an important advance toward conserving the timber supply."

Some criticism was expressed privately that the paper is much higher in general quality than standard news print paper and could not be so regarded. Others familiar with the printing processes and their requirements are doubtful if the paper would have sufficiently rapid ink absorption to operate on the high speed printing presses. All are agreed, however, that the experiment shows extremely interesting possibilities.

To Discuss Mill Problems

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., November 24, 1924.—Mill and organization problems will be the general subjects of the winter and spring meetings of the Bryant Paper Company's Foremen's Club. These will be handled largely through open round table discussions, according to John A. Ross, company paymaster. Mr. Ross, together with Edward Roomsburg and John Means, arranged the initial program. The discussion hinged on company problems solely. The club has named a get-to-gether committee for this year to stimulate interest in the programs and promote attendance. This consists of Charles Schrier, Milham division; Jules Gadke, Superior division; Neal Brady, Imperial division; Bert Smith, Bryant division and Charles Roberts, power plant.

J. D. Amey, of Otsego, has accepted a position with Pusey and Jones and has left for a Kymmene, Finland, where he will put in operation certain new machinery and equipment shipped to that country by the American concern.

* Excerpts from letters of State Boards.

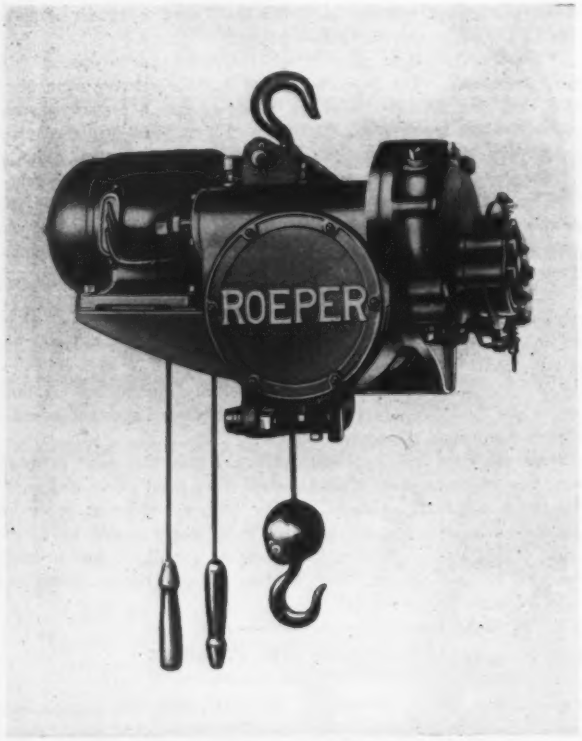
New Roeper Electric Hoist

The Roeper Crane and Hoist Works, Inc., Reading, Pa., has just developed a new small electric hoist that will complete their range of electric hoists from 500 lb. to 20,000 lb. capacity.

To meet the need of small capacity, high speed electric hoists, in places where the slow moving, strength exhausting chain blocks no longer measure up to the requirements for high production, this hoist was designed.

For some years past, manufacturers have given considerable thought to high speed production machinery, which in most cases is very expensive, and then entirely overlooked the necessity of serving these machines with quick moving hoisting equipment. The time required for the machine to turn out a given quantity of work is carefully estimated, but little thought given to keeping the machine in constant operation. Delay in bringing raw or unfinished material to the machine, and the removal of finished stock, may cut down production considerably.

Again, with the use of hand power hoisting apparatus, the operator of the production machine, who is generally paid a high wage, must call upon someone to give him a lift, so that the actual cost of serving his machine is greatly increased.



In developing the Type "R" Hoist, the manufacturers kept all these problems in mind, and concentrated their thought on simple, rugged, and yet efficient construction, that would lend itself to low production costs, and which could be sold at an attractive price.

The fact that all classes of labor might use the hoist, and especially many who have little knowledge of machinery, was carefully considered, and the need of skilled operators and expert maintenance men eliminated.

The hoist is worm geared, with the worm placed above the gear. This is the reverse of worm gear drive on most tools, and removes the cause of considerable wear and its attendant troubles. The worm shaft is equipped with a ball and thrust bearing.

Motors are of manufacturers' standards, and are mounted on their feet directly upon an extension of the hoist frame. This is in keeping with best engineering practice.

The main frame of the hoist is a one-piece casting, properly machined, that contains all bearings, so that shafts and moving parts, once assembled, can not get out of alignment.

Wrought steel suspension plates, reaching from drum shaft to overhead suspension members, relieves all tension on castings, and provides a means for hook, link, clevice, or any form of special suspension.

An automatic stop of the trip lever type, that is positive in its action, affords protection in extreme lifting and lowering. This stop can be adjusted for any distance of hook travel.

The need of a load brake is removed through the worm drive, thus avoiding all of the trouble attendant to brakes of this character. The motor is equipped with a mechanically operated jaw brake acting in series with controller, which brings the motor to a quick stop, preventing drifting of the load when the power is cut off.

Controllers are of the single-speed drum type of standard design. Push button control can also be furnished when necessary. For this control, the motor is equipped with an electric magnetic brake, and an adjustable upper and lower electric limit switch.

While the illustration shows a perfectly balanced hoist for hook suspension, it can also be furnished with either plain or geared I-beam trolleys with roller bearing wheels. Provision is also made for direct connection of hoists to any standard trolley for flat rail or special track.

Hoists of 500 lb., 1,000 lb., and 2,000 lb. capacities, are furnished with single strand of hoisting cable of the non-twisting type.

Decide on Immediate Construction

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., November 25, 1924.—One of the most important developments of the year in the Canadian paper industry was decided upon on Saturday when arrangements were concluded by Price Brothers and Company, Limited, to proceed immediately with the construction of their new two hundred ton per day news print mill at St. Joseph d'Alma in close proximity to the Duke-Price power development on the Grand Discharge. St. Joseph d'Alma is situated on the Little Discharge flowing out of St. John, and is a few miles distant from the power site. This development is part of the important plan of expansion that had been worked out by the late Sir William Price.

It is understood that the new company has sold to Montreal bankers approximately $5,000,000 of new securities, presumably for the purpose of reimbursing them in part for the recent extensions to the company's Kenogami mill, which additional capacity is now in operation, and for the development of the hydro-electric power plant at Chicoutimi, as well as to enable them to proceed with the construction of the newsprint mill at St. Joseph d'Alma. It is believed that the new issue will be of preferred stock, a form of security that the company has not hitherto issued, and an announcement of its offering to the public is expected shortly.

Bryant Company's New Machine Shop

KALAMAZOO, Mich., November 22, 1924.—Erection of the new machine shop and salvage plant for the Bryant Paper Company has started. The contract for that structure has been awarded to R. D. Boyer. The plans and specifications call for a building 172 by 57 feet and 40 feet high. Brick, reinforced concrete and steel will be used in the construction. This unit has been located as near the general center of the industry as possible, thus facilitating handling all machine and tool work for the various divisions. In the equipment and machine layout, provision has been made to do the heaviest work required around a paper mill. A traveling crane will operate on a runway within the building, thus making it possible to handle a ten ton roll conveniently.

TECHNICAL SECTION, PAGE 192

COMPARISON OF AMERICAN AND FOREIGN CLAYS AS PAPER FILLERS*

By Merle B. Shaw, Associated Technologist and George W. Bicking, Bureau of Standards

I. PURPOSE OF INVESTIGATION

There are approximately from 200,000 to 300,000 tons of clay used annually in the paper industry of the United States. Considering that the larger portion of this amount is of foreign source and that the clay resources of the United States are to a great extent undeveloped, the investigation herein reported was made to ascertain the relative merits of American and foreign clays for use as paper fillers. Since it is believed that more general use of domestic clays is in many cases restricted by prejudice, it was purposed to study American and foreign clays comparatively with regard to physical properties and also actual behavior under paper-manufacturing conditions. This latter study necessarily includes degree of retention in paper, reuse of backwaters, and influence upon quality of finished paper.

II. MATERIALS USED

1. Pulps

The pulps used for this investigation were 50 per cent sulphite and 50 per cent soda. Grellet Collins, president of Dill & Collins Company, Philadelphia, Pa., kindly made 4,500 pounds of bleached soda pulp available for this work.

2. Clays

(*a*) General Characteristics of Paper-Making Clays.—The term "clay" is applied to a variety of earthy substances, differing widely in their origin and composition and in many of their physical properties. The essential requirements of papermaking clays are: Good white color; low content of grit, mica, and other impurities; and uniformity. The first requirement must be possessed by the clay in its original state, but the percentage of impurities, such as grit and mica, can be lowered by washing and separation.[1]

To judge the quality of a good clay by feel or touch requires long experience, and a written description of such a method is, at best, inadequate. In general, however, it can be said that it has a greasy feel, adheres to the tongue when placed upon it, and disintegrates readily when mixed with water.

Preliminary examination was made of 38 samples of clays, 18 of which were foreign and 20 domestic. The clays were compared as to grit content, color, and plasticity and, considering these properties as well as the sources of the clays, eight representative samples were selected for paper-making tests. Clays numbered 1 to 5 are of domestic origin; numbered 6 to 8 are foreign.

(*b*) Sources of Clays Used in Tests.—The sources of the clays and the treatment given before shipment were as follows:

No. 1. Mined in South Carolina. The company which handles it says: "* * * is very carefully selected, likewise very carefully dried, and again selected, and then refined by the Raymond pulverizing process, which reduces the clay to a very fine powder."

No. 2. Mined in Georgia, "* * * and air dried in open sheds before shipment. It is not given any treatment, but shipped in its natural state."

No. 3. Mined in Georgia, and washed before shipment.

No. 4. Mined in South Carolina. No information was given as to its preparation.

No. 5. Mined in Virginia. No information was given as to its preparation.

No. 6. "* * * mined in Cornwall, England; is an excellent filler clay with pronounced carrying properties resulting from its exceptional fatness."

No. 7. Filler clay.

No. 8. Filler clay. This is not only a high-grade filler clay, but is also one of the best coating clays. The reason for selecting it was its good color. (See Figs. 5, 6, and 7.)

III. PAPER-MAKING EQUIPMENT USED

The paper section of the Bureau of Standards is equipped for making paper in a semi-commercial way and under practical mill conditions. The experimental paper-making equipment available for the work on clay consisted of a 50-pound wood tub beater with manganese-bronze bars and plate, a small Jordan with iron bars, a 4-plate screen, and a 29-inch Fourdrinier machine with wire 33 feet long and having two presses, nine 15-inch driers, a small machine stack of seven rolls, and a reel.

IV. TEST PROCEDURE

1. Development of Method for Handling Clays

In order to compare the paper to be made in the numerous experimental runs its was necessary to determine some uniform procedure for handling the materials and the machine, as well as to select definite places and methods for taking samples for test. It was desired that the methods used should duplicate mill conditions, but inasmuch as the various authorities differed widely as to the time of adding the clay in order to obtain greatest retention, several preliminary runs were made to determine which method would give the highest retention with ease in handling materials. The clay slip was made up in the ratio of 1 part clay to 5 of water, and each batch was agitated a fixed length of time. It was screened through an 80-mesh wire before being added to the beater, much dirt being eliminated by this process.

A brief description of the methods used in the preliminary runs is as follows:

(1) The clay slip was added at the time of furnishing the beater, the size was added later, and the alum was added after the beating was finished, just before the stock was dropped to the machine chest.

(2) The size solution was added at the time of furnishing the beater and the clay slip was added later, the alum being added just before the stock was dropped to the chest.

(3) The size and clay slip were mixed together and the resulting mixture added when furnishing the beater. As in both previous methods the alum was added just before the stock was dropped to the chest.

(4) The size solution was added when furnishing and the alum some time later, but the clay slip was not added until shortly before dropping the stock, sufficient time being permitted, however, for good mixing.

(5) Soda ash was used to deflocculate the clay and the slip was then added at time of furnishing.

Two or more runs were made for each method outlined above. The results obtained varied little in percentage of clay retention and the small variations could easily have been due to experimental differences of machine runs. The first method was adopted for

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* Technologic Papers of the Bureau of Standards No. 262.

[1] All clays can be classed as either primary or secondary. Primary (sometimes called "residual") clays are those which are found overlying, or in close association with, the rocks from which they have been derived and are thus distinguished from secondary (or "transported") clays which have been carried some distance away from their place of origin. The majority of the American clays are secondary clays, which fact may account for the non-uniformity of which manufacturers complain and which would exist if the clays were not washed or specially prepared before shipment or use.

the comparative work which follows. This method (adding the clay slip to the beater when furnishing, following later with the size, and adding the alum after the beating was finished) is also the one most used in practice, since it facilitates the handling of the stock in the beater.

2. Taking and Recording of Data

(*a*) General Data.—The method of handling the paper machinery and of taking and recording data is indicated in the "form sheets" of Appendix B. These "form sheets" are used regularly in the paper laboratory of the bureau for recording the data taken during runs. The records thus obtained also make it possible to duplicate the conditions of any run when desired. The appended forms are the complete records for one machine run, and show in detail the conditions existing during the run.

(*b*) Retention Data.—Samples for clay retention determinations were taken as follows:

Stuff box.—The stock coming from the beater chest was sampled at the stuff box. A tared cylinder was filled with the stock and weighed, after which the sample was poured onto a filter paper in a Buechner funnel, sucked down, and placed in the oven to dry.

Head box.—The sample taken here was of the stock at the head of the machine, just before it went onto the wire. It consisted of the stock coming from the stuff box (through the Jordan) after dilution with white water No. 1. A tared cylinder was filled and weighed, the sample then being poured onto a filter paper in a Buechner funnel, sucked down, and placed in the oven to dry.

Before suction boxes.—A sample of the stock was scooped from the center of the wire, about 7 feet from the slicers, placed in a tared can provided with a tight cover, weighed, and dried.

After suction boxes.—Same as "Before suction boxes," except that sample was taken after the stock had left the suction boxes.

Couch.—After the paper had passed the couch roll a strip was torn from the center of the sheet, placed in a tared moisture-tight container, weighed, and dried.

After first press.—After passing first press a strip was torn from the center of the sheet and treated as above.

After second press.—Sample taken after second press.

Reel.—Sample taken just before paper went onto the reel.

White water No. 1.—White water No. 1 was a composite of wire water and suction water[2] and was the water used for diluting the stock going from the Jordan to the machine. The excess portion was collected in a chest and measured, and from it a sample of 1 gallon was taken. The sample was filtered through a filter paper in a Buechner funnel, the solid material retained by the filter paper being dried and weighed. This weight was used in determining pounds of stock per thousand gallons. The material was analyzed in the same manner as that of the other samples.

Wire water.—Samples of the wire water before mixing with the suction water were taken at frequent intervals and from the composite sample thus obtained 1 gallon was taken.

Suction water.—Samples were taken of the suction water before mixing with the wire water.

White water No. 2.—This was the water collected by a tray under the wire and extending from the first tray (white water No. 1) nearly to the couch roll. The water was collected and weighed and from it a composite sample of 1 gallon was taken.

Press water No. 1.—The water removed by the first press was collected and weighed. The procedure followed was that for the white waters.

3. Method for Determining Percentage of Ash Due to Clay

It was necessary to establish first the percentage of ash content of paper without clay at the several places of sampling. For this purpose three machine runs were made on straight stock, size, and alum. Samples were taken at the places previously specified and ash determinations made on the bone-dry samples. The averages of the three runs were considered as the factors representing the ash content of the paper at the different places.

When filler is added to the paper there is not then the 100 per cent stock that there was in the three runs made when no clay was used, therefore, subtracting the ash for these three runs from that for paper containing filler does not correctly give the ash due to clay. However, the variation at a given place on a paper machine at different times during the run will exceed the difference obtained by these two methods of computation. Therefore, for practical purposes it is believed that the former method is satisfactory for comparative work and the per cent ash for stock from the blank runs, subtracted from the per cent ash on samples taken from runs using clay filler is considered to give the per cent of ash due to the clay. But since clay loses a certain amount of water on ignition, it is necessary to divide the percentage due to clay by such a factor as will give the true percentage of clay in the paper. This factor was determined by igniting a weighed amount of bone-dry clay under the same conditions as those under which ash was run on the paper samples. The loss in weight represents combined moisture. The weight remaining (expressed as its part of total weight) is the factor by which to divide.

For example, if in the three runs an ash factor of 0.62 was obtained for the stuff-box sample without clay, and if in later runs 17.63 was the ash determination for sample with clay, and 0.136 the loss on ignition of the clay used, then the per cent clay of this sample was $\frac{17.63-0.62}{1-0.136} = \frac{17.01}{0.864} = 19.7$.

4. Method of Determining Retention

The percentage of retention is considered as that proportion of the filler added to the engine which appears in the finished paper. The different methods used in different laboratories for computing retention account in some degree for the varying results obtained and reported. The authors are indebted to Edwin Sutermeister of the S. D. Warren Company, Cumberland Mills, Me., for the formula used in this work. The formula is:

$$\text{Retention} = \frac{0.94B(100-C-A)}{A(100-C-B)}$$

in which

A = per cent of ash in bone-dry stock going to machine,
B = per cent of ash in bone-dry paper at reel,
C = per cent of bone-dry filler lost in ignition.

Determinations by measurements on 20 machine runs, each using 20 per cent clay (these runs included the eight clays under test), accounted for an average of 0.94 of the material furnished to the beater. This is also the figure given in the formula. Mr. Sutermeister's formula, being found to check the determinations by weight, was used to compute the retentions hereinafter reported.[3]

Any formula should be tested by a mill before making use of it as the conditions in the mill might be such as to make one formula better than another for those particular conditions. Many factors other than filler influence retention, but it is impossible to estimate their effects except in a general way. Some of the conditions which affect the retention of fillers are:

(1) The kind of stock used.
(2) The extent of its beating (hydration).
(3) Consistency of pulp and the amount of clay added.
(4) Weight of paper made and speed of machine.
(5) The pull on the suction boxes, or any mechanical attachment to the machine which quickly removes water from the pulp.
(6) Chemicals used, such as starch, sodium silicate, or viscose materials.

[2] The wire water was the water caught by a tray under the table rolls and extending from the breast roll to the first suction box. The suction water was from the suction boxes. The two waters mixed in a box back of the machine and this mixture was called white water No. 1.

[3] The Technical Association of the Pulp and Paper Industry also gives in its publication on Paper Testing Methods (1922) a method for figuring retention.

TABLE 1.—Solid Material in Samples

Clay number	Per cent clay	Position on machine								Water samples				
		Stuff box	Head box	Before suction boxes	After suction boxes	After couch roll	After first press	After second press	Reel	White water No. 1	White water No. 2	Press water No. 1	Wire water	Suction water
		Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Lbs./1,000 gal.	Lbs./1,000 gal.	Lbs./1,000 gal.	Lbs./1,000 gal.	Lbs./1,000 gal.
1	20	3.52	0.752	4.03	18.60	25.16	38.67	38.70	94.93	13.80	6.53	36.83	8.32	24.33
2	20	3.45	.689	4.30	18.20	24.35	39.40	39.40	95.53	15.20	7.20	29.60	9.50	26.65
3	20	3.46	.685	3.73	18.90	24.60	39.00	39.40	95.45	14.70	6.13	28.30	9.62	24.00
4	20	3.50	.650	4.25	19.15	24.35	39.98	40.03	95.50	13.25	6.21	24.60	9.69	21.30
5	20	3.52	.655	3.75	19.05	24.25	39.55	39.75	95.13	13.45	5.58	25.05	9.14	22.10
6	20	3.49	.697	3.73	19.02	22.33	38.44	38.72	95.38	13.83	5.74	21.33	9.45	21.07
7	20	3.50	.681	3.63	19.63	22.10	39.11	39.21	95.18	13.40	5.29	18.00	10.40	18.50
8	20	3.49	.678	3.90	19.78	22.11	39.63	39.63	95.43	12.50	5.03	22.35	9.33	17.60
8	[1] 20+	3.60	.674	3.50	20.33	22.56	39.30	40.00	96.00	12.80	5.27	21.90	10.40	16.50
3	30	3.74	.800	3.39	21.09	24.45	40.59	40.71	96.43	18.63	5.99	39.30	13.28	25.13
6	30	3.80	.818	3.21	21.38	24.55	41.08	41.53	96.04	17.15	6.72	31.15	15.15	20.10
3	10	3.27	.549	3.75	18.61	22.13	38.06	38.78	95.08	5.20	2.31	10.05	3.36	7.70
6	10	3.42	.571	3.63	18.71	21.85	38.36	38.63	95.23	6.07	2.49	10.10	4.48	8.44
3	5	3.32	.561	4.22	17.25	21.18	37.80	37.80	95.34	3.45	2.04	6.17	2.68	5.58
6	5	3.21	.572	3.94	17.60	21.46	37.23	37.58	94.57	3.43	2.14	5.49	2.53	5.24
Bentonite	5	3.09	.621	3.28	18.47	23.14	37.80	38.08	95.71	5.12	2.33	13.63	3.58	7.21

[1] Special, using white water No. 1 from previous run for furnishing beater.

(7) Use of save-alls.

In the work of this investigation the beating, jordaning, and machine runs were controlled very carefully, the only changes made being the kind and percentage of clay added.

V. COMPARATIVE WORK

1. Varying Kinds of Clay

Tests were run on each of the eight clays using 20 per cent clay, by weight, of the furnish (clays Nos. 1 to 5, domestic; Nos. 6 to 8, foreign). The results are given in the upper half of Tables 1 to 3, and are in each case the average of two, and in some cases three, runs.

Table 1 gives the per cent of solids at the different places of sampling on the machine and the pounds of solid material per thousand gallons for the different machine waters. Table 2 gives the per cent of clay in the solid material, or stock, of the different samples and also the retention figures. Table 3 gives the test data on the finished paper.

In comparing the clays for retention (Table 2) it will be seen that the difference between the highest and lowest retention is not sufficient to warrant the selection of one clay over another, assuming that there is no difference between them in other respects.

2. Value of White Water for "Furnishing"

A special run was made for one clay (No. 8), white water No. 1 from a previous run being used instead of fresh water in furnishing the beater. In figuring the retention for this run the amount of clay and pulp added in the white water in furnishing was taken into consideration and the value 0.648 obtained. This checks very closely with that of the previous run which was 0.655. If the retention for the clay in the finished paper was figured only on the clay slip added to the beater, not including the clay contained in the white water, the retention figure would have been higher. This difference in retention, or the recovery of stock, shows plainly the desirability of using white water for furnishing.

3. Varying Percentage of Clay

On one domestic clay and one foreign clay comparative runs were made using 30 per cent, 10 per cent, and 5 per cent of clay, respectively. The results are shown in the lower half of Tables 1 to 3, and here again it will be seen that one clay practically checks the other in retention. The increased retention when using smaller amounts of clay is very evident, as would be expected.

4. Bentonite

Bentonite is a peculiar variety of clay used for certain special purposes. It is fine-grained, soft, and absorbs over three times its

TABLE 2.—Clay in Solid Material of Samples

Clay number	Clay in furnish	Retention	Position on machine								Water samples				
			Stuff box	Head box	Before suction boxes	After suction boxes	After couch roll	After first press	After second press	Reel	White water No. 1	White water No. 2	Press water No. 1	Wire water	Suction water
	Per cent		Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
1	20	0.620	20.48	25.43	22.13	15.58	14.84	14.22	14.30	14.41	71.83	61.60	68.20	66.90	75.20
2	20	.611	19.95	26.80	21.20	14.90	14.16	13.57	13.72	13.80	74.65	65.75	67.45	73.55	76.70
3	20	.636	20.03	27.23	21.88	15.30	14.70	14.18	14.32	14.48	74.10	67.73	64.00	72.30	76.30
4	20	.630	19.70	27.20	20.65	14.85	14.21	13.77	13.86	14.05	75.10	67.90	67.50	74.60	77.00
5	20	.633	19.95	26.95	21.00	15.15	14.72	14.25	14.18	14.26	74.50	69.35	66.60	72.20	76.25
6	20	.655	20.33	26.33	21.43	15.68	15.51	15.05	15.07	15.00	72.40	70.03	64.56	71.70	74.30
7	20	.642	20.15	27.00	21.20	15.05	14.87	14.60	14.66	14.57	73.45	70.85	64.05	72.90	75.30
8	20	.655	19.45	25.75	20.75	14.87	14.67	14.16	14.20	14.30	73.00	71.25	64.40	72.25	74.90
8	[1] 20+	.648	21.2	27.4	22.8	15.90	15.75	15.50	15.45	15.47	72.7	71.6	65.1	72.3	75.0
3	30	.600	29.65	35.56	30.52	22.05	21.40	20.83	20.93	21.00	82.00	88.20	72.20	83.10	83.00
6	30	.632	29.55	36.00	31.20	22.37	22.30	22.00	21.90	21.95	77.25	74.85	67.85	77.00	78.25
3	10	.720	9.92	11.07	10.44	8.01	7.81	7.70	7.70	7.66	65.00	70.20	58.20	64.20	64.50
6	10	.748	9.46	12.40	10.50	7.86	7.72	7.53	7.56	7.57	56.60	49.65	54.66	55.66	62.50
3	5	.744	5.20	6.22	5.53	4.23	4.09	4.00	4.02	4.02	52.00	51.15	48.65	43.85	52.25
6	5	.740	5.28	6.49	5.35	4.28	4.20	4.08	4.07	4.11	46.25	42.10	45.55	43.30	50.00
Bentonite	5	.742	5.09	6.10	5.65	4.38	4.11	3.95	3.88	3.96	39.93	29.60	43.96	27.73	44.30

[1] Special, using white water No. 1 from previous run for furnishing beater.

weight of water accompanied by swelling, and when fresh has a yellowish-green color.

Runs were made on bentonite, using only 5 per cent, since in a preliminary run it was found that 20 per cent was very difficult to handle on the machine. The retention for 5 per cent checks very well with that for clays Nos. 3 and 6. (See Table 2.)

Bentonite might be expected to show marked differences from other clays due to its "highly colloidal nature," but no such differences were observed for retention. It is claimed that when bentonite is used with another clay it increases the retention of that clay[4], but no tests were made for this quality.

VI. DUPLICATION OF COMMERCIAL-MILL TEST IN BUREAU OF STANDARDS EXPERIMENTAL PAPER MILL

1. Tests Made

In connection with the study of foreign and domestic clays in paper making it was thought advisable to make a commercial-mill test for clay retention in paper and losses in white water. With the hearty cooperation of the Miami Paper Company, West Carrollton, Ohio, these tests were made in the mill of that company, under the personal supervision of the authors, February 27, 1923. A complete report of the test results was prepared and submitted to the Miami Paper Company. A copy of that report (with the addition of graphic charts and a few minor changes in form) is given in Appendix A, pages 360 to 369.[5]

At the time of making the commercial-mill tests plans were made for making several runs in the experimental paper mill of the Bureau of Standards, duplicating as nearly as possible the mill conditions of the Miami test. For this work sufficient clay and pulps for several runs were furnished the bureau by the Miami Paper Company. One of the clays received (designated as Miami$_1$ in this publication) was that used in the test reported in Appendix A; the other (Miami$_2$) was a mill clay and was submitted for comparative tests; the bureau added another (clay No. 1) for the comparative tests.

Three runs were made on each of these clays using the same percentages of stock as were used in the Miami test. The values given for each clay in Tables 4 and 5 are the averages of the three results for that clay. The mill of the bureau is, however, not equipped with a save-all, as was the mill of the Miami Paper Company, and in comparing the data this should be considered.

[4] Wilkinite, A new loading material, by Sidney D. Wells, Paper Trade Jour., Nov. 18, 1920.

[5] The report also includes additional data on the value of a save-all and on the amount and analysis of stock at different parts of the paper machine.

TABLE 4.—Solids in Machine Samples

SOLID MATERIAL

Clay	Position on machine								Waters		
	Stuff box	Head box	Below suction	After suction	After couch	After first press	After second press	Reel	White water No. 1	White water No. 2	Press water No. 1
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Lbs./1,000 gal.	Lbs./1,000 gal.	Lbs./1,000 gal.
Miami$_1$	3.54	0.722	3.92	16.59	24.72	36.12	36.28	95.49	14.07	8.43	17.27
Miami$_2$	3.53	.685	3.12	17.30	24.44	36.31	36.46	96.26	11.04	5.56	13.43
No. 1	3.49	.674	2.44	16.79	25.30	35.50	35.80	96.00	13.17	5.60	15.67
	CLAY (ON SOLIDS)										
Miami$_1$	19.48	26.13	20.20	15.23	14.95	14.78	14.77	14.91	77.37	78.73	75.09
Miami$_2$	20.00	26.39	21.53	16.73	16.59	16.43	16.46	16.48	78.60	78.23	78.10
No. 1	20.00	26.40	22.50	16.65	15.95	15.60	15.65	15.65	79.80	77.50	81.09

TABLE 5.—Physical and Chemical Tests on Finished Paper

Clay	Weight, 25 by 40-500	Weight, 44 by 62-500	Bursting strength	Thickness	Ratio[1]	Resins	Ash
	Pounds	Pounds	Points	Inch	Per cent	Per cent	Per cent
Miami$_1$	56.1	153.1	13.80	0.0021	24.60	1.68	13.62
Miami$_2$	53.4	151.0	14.67	.0020	26.47	1.68	14.82
No. 1	54.0	147.2	10.90	.0029	20.20	1.61	14.81

[1] Ratio is obtained by dividing the bursting strength by the weight of the standard size ream (25 by 40-500) and multiplying the result by 100.

2. Comparison of Clay Retention

Since the bureau mill was not equipped with a save-all, comparison of clay retention in the two mills was based on the ratios of clay at reel to clay at head box. Comparative data for the three clays are as follows:

Miami$_1$ clay

Miami mill:	Per cent
Clay at head box	31.6
Clay at reel	17.9

$$\frac{17.9}{31.6} = 0.567$$

Bureau of Standards mill:	
Clay at head box	26.13
Clay at reel	14.91

$$\frac{14.91}{26.13} = 0.571$$

TABLE 3.—Test Data on Finished Paper

Clay number	Clay in furnish	Physical tests								Color tests			Finish (gloss)		Fiber composition		Chemical tests		Sizing quality	
		Weight, 25 by 40-500	Bursting strength	Thickness	Ratio bursting strength to weight, 25 by 40-500	Tensile strength (1 inch width)		Tearing strength machine direction	Brittleness cross direction	Coefficient of reflection (average of wire and felt side)			Felt side	Wire side	Sulphite pulp	Soda pulp	Ash	Resin	Curl	Stickigt
						Machine direction	Cross direction			Blue	Green	Red								
	Per cent	Pounds	Points	Inch	Per cent	kg	kg	g	Per cent				Per cent	Per cent	Per cent	Per cent	Per cent	Per cent		
1	20	56.00	8.21	.0033	14.70	4.56	2.16	28.86	41.66	.743	.800	.825	31.03	30.66	50	50	12.76	1.34	22	28
2	20	54.95	9.40	.0032	17.10	5.20	2.65	33.00	48.75	.736	.800	.826	33.80	33.00	50	50	12.35	1.35	24	55
3	20	56.00	9.13	.0032	16.25	5.00	2.56	32.46	49.03	.742	.800	.826	35.33	35.53	50	50	12.90	1.50	24	56
4	20	54.70	9.54	.0033	17.50	4.20	2.90	32.00	41.75	.756	.806	.833	34.25	34.50	50	50	12.20	1.35	21	63
5	20	55.40	10.04	.0032	18.15	4.40	2.65	34.35	33.40	.749	.802	.828	35.25	34.25	50	50	12.80	1.50	27	25
6	20	54.06	10.80	.0032	19.93	4.50	2.53	36.63	37.90	.757	.803	.829	31.03	32.63	50	50	13.40	1.23	33	55
7	20	55.35	11.50	.0032	20.75	4.70	2.75	31.30	39.50	.742	.797	.823	30.35	30 50	50	50	13.10	1.11	35	82
8	20	54.40	9.95	.0031	18.30	4.85	2.40	34.00	31.75	.752	.802	.824	30.90	31.55	50	50	13.05	1.30	32	57
8	[1]20+	54.3	12.3	.0032	22.6	4.8	2.5	36.4	41.4	.743	.791	.815	32.7	31.8	50	50	13.7	1.4	22	20
3	30	57.50	8.56	.0034	14.86	2.63	1.61	40.80	26.60				34.63	34.43	50	50	18.24	1.57	15	9
6	30	57.10	8.55	.0031	14.95	3.25	2.10	31.40	28.65				34.35	33.25	50	50	19.55	1.15	22	25
3	10	55.67	15.80	.0035	28.35	4.68	3.18	49.00	42.90				32.80	33.00	50	50	7.00	1.83	30	69
6	10	55.40	13.63	.0034	24.60	5.53	3.30	40.46	35.10				31.23	31.30	50	50	7.03	1.25	29	62
3	5	55.53	15.85	.0033	28.56	6.26	3.68	39.40	38.06				29.26	30.16	50	50	3.97	1.36	26	59
6	5	56.25	18.10	.0033	32.20	6.60	3.60	37.93	40.87				30.93	32.00	50	50	3.87	1.34	27	66
Bentonite	5	57.10	14.74	.0033	25.80	6.21	3.24	50.26	36.43				30.26	30.56	50	50	4.23	1.43	26	80

[1] Special, using white water No. 1 from previous run for furnishing beater.

The high percentage of clay at the head box in the test made at the Miami mill was due to the fact that the stock from the machine chest was diluted not only with machine white water, but also with water from the save-all. Table 13 states that "water from bottom of save-all used to dilute stock" had in it 31.15 pounds of material per thousand gallons, and that 56.24 per cent of this was clay.

The value of the save-all is again shown very clearly. The stock at the stuff box in the Miami test was 19.9 per cent clay (see Table 12, p. 362) while the stock at the head box was 31.6 per cent clay, an increase of 58.8 per cent over that at the stuff box. The work in the bureau mill on the same stock and clay showed the stock at the stuff box to have 19.48 per cent clay (see Table 4) and that at the head box 26.13 per cent, an increase of only 34.1 per cent. This comparison shows that the use of white water for dilution purposes is an important factor in the retention or recovery of clay.

There has been considerable objection to the use of a save-all, as it is thought by some that it causes slime. It is believed, however, that if the trays catching the different machine waters were permitted to collect only the water containing no dirt and oil from the bearings, and if care is taken to keep the various parts of the recovery system as clean as the other paper-making equipment, there would be very little trouble from slime. The saving in water and material would well pay for the extra work imposed.

The results of tests in the two mills were considered as checking each other, so with them as a basis the other two clays were compared with Miami$_a$ the runs being made with the same stock and percentages and under the same conditions.

Miami$_a$ clay

Bureau of Standards mill:	Per cent
Clay at head box	26.30
Clay at reel	16.48

$$\frac{16.48}{26.30} = 0.627$$

As previously stated the value thus obtained (0.627) is not the per cent retention, but is a comparative value. The retention for this clay was approximately 70 per cent.

Clay No. 1

Bureau of Standards mill	Per cent
Clay at head box	26.40
Clay at reel	15.65

$$\frac{15.65}{26.40} = 0.594$$

In comparing clays Miami$_a$, Miami$_b$ (both foreign), and No. 1

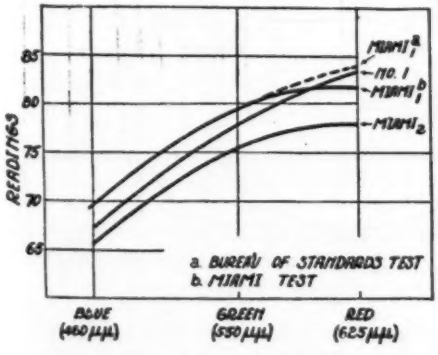

FIG. 4.—*Color characteristics*

(domestic) for retention it will be noted that their relative order is Miami$_a$, No. 1, and Miami$_b$.

3. Comparison of Color of Papers Made

Color tests were run on the paper containing Miami$_a$, Miami$_b$, and No. 1 clays. Figure 4 shows the comparative color values. It will be noted that the curves for Miami$_1$ (Miami test) and Miami$_2$ have the same slope, but that Miami$_1$ made a brighter sheet. The sheet for clay No. 1 had a yellowish or brownish cast, which was also noticeable to the eye when comparing the three sheets.

VII. PHYSICAL PROPERTIES OF CLAYS USED IN THE PAPER TESTS

The purpose of the tests on the physical properties of the clays was to determine whether there was a relation between any physical

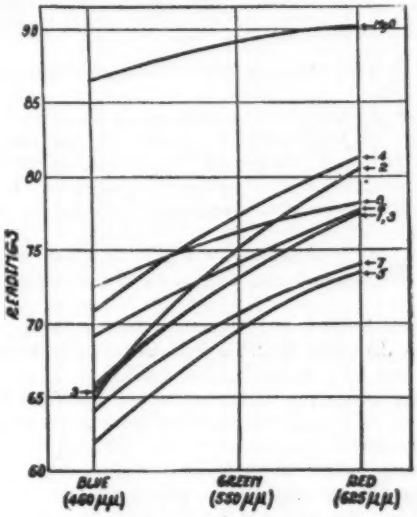

FIG. 5.—*Color characteristics*

property and the amount of retention in paper. A number of these tests are reported not for their direct value, but for the general information they give. There were no chemical analyses made. The tests on physical properties, with the exception of color, were made by F. P. Hall, ceramics division, Bureau of Standards.

1. Color

The color or degree of whiteness of clays is important in their selection especially for use in high-grade papers. The usual method of comparing clays for color is to place them side by side and to grade by the eye, but by this method it is impossible to give numerical values. Therefore, for the tests reported in Table 6, a Pfund colori-

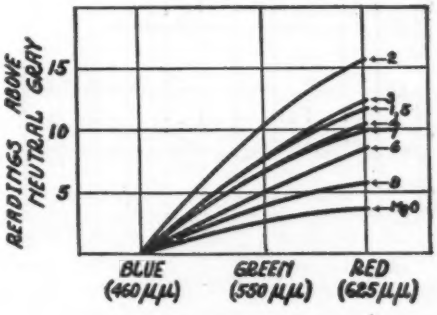

FIG. 6.—*Color curves*

meter[6] was used to determine the color characteristics of the clays. This instrument shows very slight variations in color and gives numerical values as a basis for comparison.

The tests were made on dry clay, since the color of clay under water is usually different from the color when dry. The dry clay was pressed on the lower plate of the colorimeter, and a white paint was used for the upper plate. Magnesium oxide was included with

[6] Pfund, A. H., "A new colorimeter for white pigments and some results obtained by its use." Amer. Soc. for Test. Matrls., June, 1920.

TABLE 6.—Color Characteristics

Sample	Blue (wave length 460 μμ)	Green (wave length 530 μμ)	Red (wave length 625 μμ)	Brightness values
MgO	86.5	89.1	90.1	89.33
1	65.9	73.2	77.6	74.66
2	65.0	75.2	80.5	76.96
3	65.5	73.2	77.6	74.65
4	70.9	77.4	81.3	78.65
5	61.9	69.6	73.4	70.84
6	69.2	74.1	77.7	73.30
7	64.1	70.7	74.1	71.80
8	72.5	76.3	78.2	76.07

the samples in order to give a value of white for comparative purposes.

The curves of Figure 6 show more readily the color comparison of the clays. For these curves the reading for blue was taken as the zero in each case. Values for a true gray, or rather a clay which is nonselective in color, will give a horizontal line, the reflection coefficients for blue, green, and red being equal Pfund's article states:

* * * if it reflects nonselectively it is to be called "white." According to this nomenclature, true grays are whites of different brightness.

As the color becomes more selective; that is, shows a tint or dominant hue, the values for the reflection coefficients diverge. This is especially true for clay No. 2. (See Fig. 6.)

To give the clays a true rating, brightness as well as color must be considered. It is a well-known fact that the excitation value for blue is extremely small compared with that for red and green. The "brightness values" given in Table 6 were figured by using factor values with the readings for red, green, and blue given in that table. The factor values were taken from the "Report of Committee on Colorimeter for 1920-21," by L. T. Troland, chairman, Journal Optical Society of America, 1922. That article states, pages 550-551:

* * * Mr. Weaver and the writer (Mr. Troland) have made new experimental determinations of the chromatic visibility coefficients for their own eyes and those of one other subject. * * * The average values for the factors obtained from our three subjects were: Red, 0.370; green, 0.617; and blue, 0.012.

Page 582 states:

To simplify computation, these valences have been expressed so as

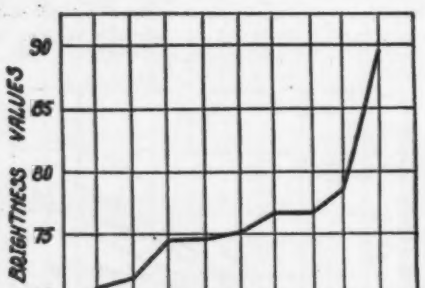

FIG. 7.—*Brightness curve*

to represent the fractional contributions of the three excitations to the luminosity of a white, taken as unity, * * *.

Applying these determined factors the brightness values of Figure 7 were obtained.

Considering the curves of Figs. 5, 6, and 7 collectively, it will be seen that domestic clays 3, 1, and 4 compare very favorably with foreign clays 6 and 8, and perhaps excel 7. If a small amount of blue dye were added with clays 3, 1, and 4 the paper made would doubtlessly be as good in color as that obtained with clays 6 and 8, but the blue would make the paper less selective, approaching more of a gray, and there would be some loss in brightness.

2. Grit

Three standard screens (100, 200, and 330 mesh) were stacked so that the 100-mesh screen was on top and the 330 on the bottom. A 100 g bone-dry sample of clay was mixed with water and made into a slip. The slip was poured onto the stack of screens and sprayed with a gentle stream of water until the water running through the screens showed no trace of clay. The residues were

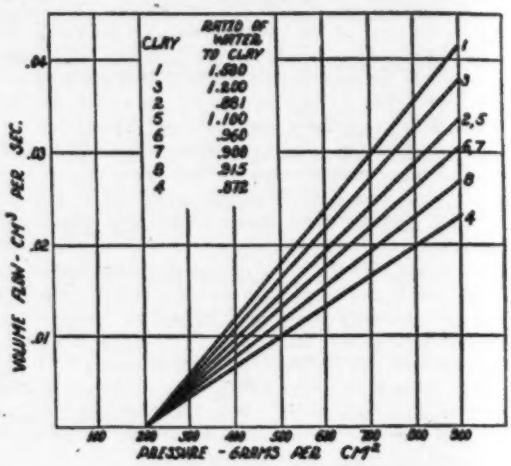

FIG. 8.—*Bingham plastometer curves*

examined to see that the particles retained were individual particles and not conglomerates of particles, since some domestic clays tend to "ball up" on the screens, resulting in the grit being reported higher than it really is. The use of a deflocculating agent, such as sodium hydroxide or sodium carbonate, will prevent this. The amount of grit left on the screens is reported in Table 7.

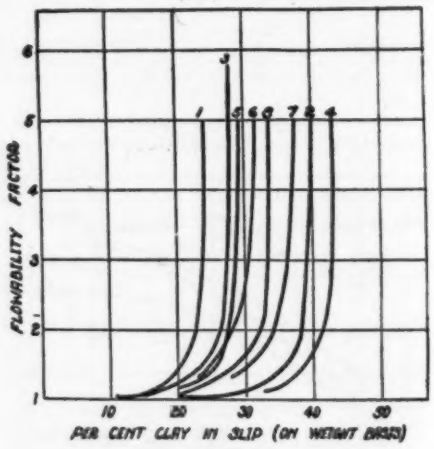

FIG. 9.—*Flowability curves*

The character of the residue from clays may vary greatly, although it consists ordinarily of quartz and mica. Microscopic examination of the residues from the eight clays reported above showed the following compositions:[7]

No. 1. Principally mica, with 5 per cent or less of quartz, a small amount of kaolin, and some hydrated iron oxide.

No. 2. About 60 per cent mica, 35 to 40 per cent kaolin, and little or no quartz.

No. 3. Less than 10 per cent kaolin, practically no quartz, and remainder mica.

[7] Examination of residues was made by Dr. Herbert Insley, Bureau of Standards.

TABLE 7.—Grit, in Clay, Left on Screen

Screen mesh	Clay number—							
	1	2	3	4	5	6	7	8
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
100	0.126	0.050	0.009	0.030	0.048	0.011	0.032	0.004
200	.055	.100	.336	.130	.442	.053	.045	.015
330	.605	.204	.605	.380	.910	.832	.220	.115
100+200	.181	.158	.345	.160	.490	.074	.077	.019
100+200+330	.786	.362	.950	.540	1.400	.906	.297	.134

No. 4. About 75 per cent mica and 20 to 25 per cent kaolin.

No. 5. Principally fine-grained mica, some kaolin, and a very little quartz.

No. 6. Less than 3 per cent quartz, less than 10 per cent kaolin, and the remainder mica.

No. 7. Practically all mica, with less than 5 per cent quartz.

No. 8. Less than 5 per cent quartz, 15 to 20 per cent kaolin, and the remainder mica.

3. Plasticity

Clay slips made from the several clays were tested to determine the relative plasticities of the clays used. The Bingham plastometer was used for the test. The plastometer is fully described in an article by E. C. Bingham and Henry Green in the "Proceedings of the American Society for Testing Materials, 1919 and 1920," and the method used for comparing the plasticities is described in Bureau of Standards Technologic Paper No. 234. The same capillary was used in all of the tests.

The curves of Fig. 8 show clay No. 1 to be the most plastic and clay No. 4 to be the least plastic.

One writer states that "Degree of plasticity of the clays seems to play an important rôle, since it is found that a given paper will often retain a greater quantity of some clays than others, those of which the greatest quantity is retained being the most plastic." If

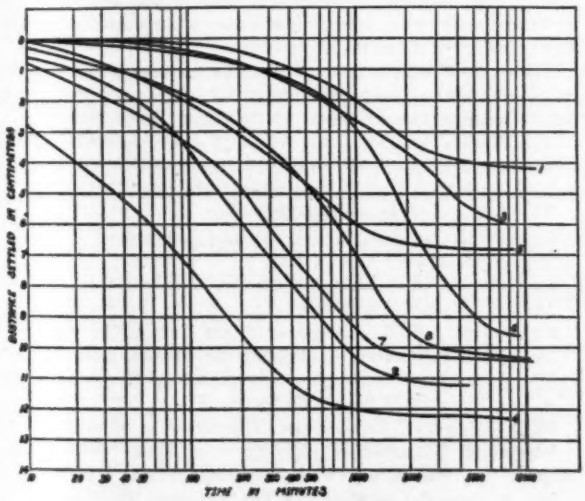

FIG. 10.—*Rate of settling in water* $\left(\frac{W}{C}=\frac{5}{t}\right)$

this were true clays could be graded as to retention by determining their relative plasticities, but the curves of Fig. 8 do not show the plasticities to be in the same respective order as the retention values for the clays. (See Table 2.)

4. Time of Slaking in Water, Volume Shrinkage and Water of Plasticity, Transverse Strength of Clay in Dry State, Ratio of Pore to Shrinkage Water, True Specific Gravity

These tests were all made according to the recommendations of the committee on standards, American Ceramic Society, in its report of April, 1922, Journal of the American Ceramic Society. The results of the tests are given in Table 8.

TABLE 8.—Miscellaneous Physical Tests on Paper Clays

Clay number	True specific gravity	Slaking time	Volume shrinkage	Water of plasticity	Ratio of pore to shrinkage water	Transverse strength
		Minutes	Per cent	Per cent		Lbs./in.²
1	2.680	6½	21.73	48.33	1.97	49
2	2.615	5	19.23	41.36	2.08	126
3	2.622	6	22.50	46.72	1.85	68
4	2.608	10	13.40	34.48	2.91	33
5	2.625	5	19.50	40.20	2.31	55
6	2.632	10	20.06	41.20	1.98	45
7	2.636	43	12.49	34.18	3.15	23
8	2.616	11½	15.35	40.06	2.70	47

5. Elutriation

The construction and use of the elutriator used in these tests is described by Charles F. Binns in the Transactions of the Amer-

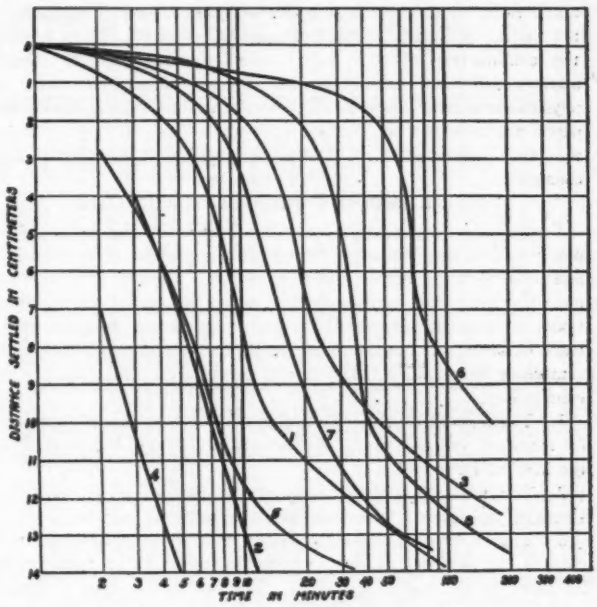

FIG. 11.—*Rate of settling in water* $\left(\frac{W}{C}=\frac{19.6}{t}\right)$

ican Ceramic Society, volume 17. The results of the tests are given in Table 9.

TABLE 9.—Elutriation of Paper Clays

Clay number	Upward velocity mm/sec.					
	1.50	0.70	0.18	0.08	0.04	Overflow
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
1	0.44	0.26	1.59	3.50	3.92	90.29
2	.38	.26	3.20	17.10	15.00	64.06
3	.58	.55	1.63	9.59	11.60	76.14
4	.44	.23	8.40	14.60	21.00	55.33
5	.74	.91	9.00	14.10	16.30	58.95
6	.49	.41	8.23	6.28	12.43	72.33
7	.15	.38	2.49	28.30	28.90	34.56
8	.13	.21	3.32	12.78	5.73	78.78

6. Flowability of Clay Slip

The Bleininger efflux viscosimeter[3] was used in making these tests. The so-called viscosity, or, better, the flowability, of clay slips with varying water content was determined for each clay. The results are shown in Figure 9. The factor value is the ratio of the time required for 200 cm³ of clay slip to flow through an orifice to the time required for the same amoune of distilled water to flow through the same orifice. This factor is plotted against the per cent of clay in the slip.

Adding sodium hydroxide to clay slip will deflocculate the clay and lower the factor, while adding alum has the converse effect. Thus a clay slip that will not flow through the viscosimeter can be made to do so by the addition of a small amount of sodium hydroxide.

[3] B. S. Tech. Paper No. 51.

7. Rate of Settling of Clay in Water

The rate of settling is given in Figures 10 and 11 for ratios of water to clay of 5 to 1 and 20 to 1, respectively. When the ratio $\frac{W}{C}$ is small the settling is retarded. Fineness is more likely to be shown when the ratio is large.

8. Conclusions

It is quite evident that to understand and interpret the results given under plasticity, elutriation, flowability of clay slip, and rate of settling of clay in water it would be necessary to measure the colloidal content of the clays and perhaps determine their alkali salts, as it is realized that these constituents have considerable effect upon the physical properties of clays. It is believed the continuation of this work, including the study of colloidal matter and alkali salts contained in clays and their effect on physical properties, would be very desirable. The data in this paper are reported for general information only and it is hoped that they will lead to a further study of clay properties or clay constants.

VIII. SUMMARY AND CONCLUSIONS

Comparative paper runs have been made in the experimental paper mill of the Bureau of Standards using eight (five American and three foreign) representative commercial clays as fillers. Tests have also been made on the physical properties of the clays. Additional data on clay retention in paper and losses in white water were obtained on samples taken in a commercial paper mill from a machine in operation. The results point to the following general conclusions:

1. The amount of clay retained in the paper at any of the places of sampling on the paper machine is practically independent of the kind of clay used.
2. The physical characteristics of the finished paper (bursting strength, finish, etc.) are essentially the same for all the clays.
3. The study of white-water losses in a commercial paper mill showed the per cent of clay retention in paper to be considerably increased by the use of a save-all. The save-all not only increased stock recovery by permitting the reuse of water with high concentration of stock for dilution purposes, but also effected a saving of thousands of gallons of water.
4. The retention data of the commercial-mill test agree with those of the duplicative work in the experimental mill of the bureau, thus showing the applicability to the paper industry of data derived from experimental runs in the Bureau of Standards paper mill.
5. Differences were noted in the physical properties of the clays, color and grit tests favoring slightly those of foreign source. These differences are not sufficient, however, to warrant consideration of only these qualities in selecting clays.
6. No correlation was found between the physical properties of the clays and the papers made therefrom.

Miami Valley Technical Section

The second meeting of the Miami Valley Technical Section, which was formed last May, was held at Middletown, Ohio, on November 7, in Gardner-Harvey Hall.

The twelve members present discussed the Paper Drying Code at considerable length. Arthur R. Harvey gave a detailed account of method, procedure, calculation and the results of tests he had made on one of his board machines.

The Section decided to submit to the consideration of the Drying Committee the advisability of indicating in the Code the theoretical amount of heat required to raise the temperature of the stock as well as the water, and also that required to raise the temperature of the air used in carrying away the moisture during the drying operation.

Features for Power Show

An important educational feature of the coming Power Show is a series of lectures by leaders in the mechanical field who will deal with the important developments in the various phases of power and mechanical engineering. The show, officially known as the National Exposition of Power and Mechanical Engineering, will be held in the Grand Central Palace, New York, during the week of December 1 and the lectures will be scheduled during the week at times that will avoid conflict with the meetings of The American Society of Mechanical Engineers and the American Society of Refrigerating Engineers which will be held at the same time. Nine lectures will be given. The names of seven of the speakers are given below.

December 2, 2:00 P. M.—Hydraulic Equipment—William W. White, Manager Hydraulic Dept., Allis-Chambers Company.

December 3, 2:00 P. M.—Materials Handling—Matthew W. Potts, of "Industrial Management," New York.

December 3, 8:00 P. M.—Mechanical Refrigeration—Frank L. Fairbanks, Chief Engineer of the Quincy Market, Cold Storage and Warehouse Co., Quincy, Mass.

December 4, 2:00 P. M.—Steam Prime Movers—C. Harold Berry, Technical Engineers of Power Plants, Detroit Edison Co., Detroit, Mich.

December 4, 8:00 P. M.—Machine Tools—Ralph Flanders, Mgr., Jones & Kamson Machine Co., Springfield, Vt.

December 5, 2:00 P. M.—Mechanical Power Transmission—G. A. Ungar, Vice-President of the Engineering and Commerce Corp., N. Y.

December 5, 8:00 P. M.—Oil and Gas Engines—Dr. Charles E. Lucke, Prof. of Mechanical Engineering, Columbia University, New York.

The lecture series has been designed to be of particular interest to the large number of engineering students who visit the Exposition as well as those engineers who wish to take this opportunity to bring themselves up to date in the phases of mechanical engineering outside of their particular specialty.

The motion picture program contains a large number of new releases that supplement the program of lectures and illustrate the great mechanical developments of the year.

The World's Advance in the Art of Making Paper Mechanically.
Thomas A. Edison Visits the General Electric Company Works.
Development of Signal Communication to the Wireless.
The Behavior of Atoms and Molecules.
Mechanical Operation in Forestry and Lumbering.
Revelations Made by the X-Ray.
Big Deeds in Mechanical Engineering.
Making Electrical Porcelains.
Building of a 50,000 Horepower Steam Turbine-Generator.
Mechanical Engineering in Building the Panama Canal.
Mining, Smelting, Refining and Manufacturing Copper and Brass.
A Step Forward in Stoker Performance.
Mining, Smelting, Refining and Manufacturing Monel Metal.
Power: Its Generation in Big Engines of Today and Yesterday, showing the Construction of the Weymouth Power Station.
The Mechanical Operation in a Big American Dye Plant.
The Painted Molecule: A Story of Wrought Iron Pipe.
The Man at the Throttle of a Locomotive.
Jewels of Industry: The Story of Carborundum.

The Power Show is under the Management of The International Exposition Company, with Charles F. Roth and Fred W. Payne, Managers, with offices in the Grand Central Palace, New York.

Odd Fire at Whitmore Plant

HOLYOKE, Mass., November 25, 1924.—An odd fire occurred at the plant of the Whitmore Manufacturing Company a day or so ago. Sparks from a blower ignited some refuse at the cupola of the mill and gave the firemen quite a little fight, it being hard to reach conveniently. It was extinguished with but a small loss.

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THE TREATMENT OF IDLE TIME*

By S. Laurence Gill, F. C. W. A., A. C. A.

Idle Time! What a vista!

If one did not know the nature of this serious journal, it would be impossible to say what would be the lines of this paper. R. L. Stevenson wrote "An Apology for Idlers" and in more recent times is it not G. K. Chesterton who has done a similar thing? Nearly all the poets have loved idleness, but with it, has generally gone, expressed or unexpressed, its companion quality of contemplation—the quality which makes human physical idleness fruitful.

But inviting and even tempting as these various topics are to the born idler, one must, I suppose, as Ulysses did, stop one's ears to the songs of the sirens and address one's attention to the sterner facts of economic life, and in particular to that still more prosaic thing—the treatment of idle time, especially that of plant and equipment, in arriving at a production cost for an article or a job.

I propose therefore to divide these few notes under the following heads:—

1—The nature of the problem, and the necessity for its solution.
2.—The method of its solution, and
3.—The use of the resultant figures.

The Nature of the Problem, and the Necessity for Its Solution

This problem has unfortunately become more acute of recent years. Not that it did not exist before, but it only existed for short periods and spasmodically.

Unemployment and the idleness of works and sections of works were not on so great a scale.

To-day, there are few industries in the country going full time. To name only three of the largest—the cotton trade, engineering and shipbuilding—are all seriously troubled with short time. Machinery, plant and equipment is lying at least partially idle everywhere. The reasons for this idleness and any thoughts which they provoke are outside the immediate purpose of this paper. As Cost Accountants we must simply start from the fact that idle plant time exists and may quite easily "queer" our figures.

What, then, is the nature of the problem from a Cost Accountant's point of view? It is, I think, this: in the older form of Costing, one constantly found one's unit costs (particularly, of standing charges) moving up and down with the "busy-ness" or "non-busy-ness" of the works.

A Works Manager, interrogated about his high unit costs, could always say—"Ah! yes: but that is the effect of short time." And he was at least partially and possibly wholly, right. Inquiry was balked at the outset: it might be stifled if his statement were not carefully analyzed, facts might be hidden which should be brought to light.

Costs are required for two purposes:—
(1) As a check on economy of production and
(2) As a guide to a selling price.

Now, costs of a particular product which contain in them an unknown or "X" quantity of an undesirable element, and which quantity varies from time to time, inflating the final figure by a mysterious something which may only be guessed at and the amount of which is not known, are not of much use.

Criticism of Production Cost

Take the criticism of the cost of production point of view first. Suppose the total cost per unit of manufacture has gone up. If the Cost Accountant discloses by his figures no more than this, the Manager may say "short time" and close the argument.

Similarly, suppose one is considering costs from the selling point of view; and the total cost per product has gone up in some sort of proportion with the increasing slackness of the works; if prices are to follow costs, the logical conclusion of this argument appears to be that the slacker the works the higher the selling price. This appears to be the converse of common sense. Something is wrong somewhere; and it is necessary to begin again and carefully to check each step in our statement and inference.

And yet, let us notice in passing, costs have been prepared in this way in almost all businesses for unknown periods—costs haunted by the presence of this flitting and illusive factor.

Seasonal trades, market crises, world crises—all upset the equilibrium of demand and therefore—output. When then shall one do? What is the problem? Either the unit cost of fixed charges must be ignored or the costs must be rid of this disturbing factor—the costs of idle time.

It resolves itself therefore into, first, the determination of a normal product or a process cost for standing charges, and, second, the throwing out for further consideration of the apparently increased unit charge caused by the Idle Time.

How then is this problem to be solved? We turn to the second point "Methods of its Solution."

Methods of Its Solution

In my opinion, the key to this question is the introduction of an account to be called the "Idle Capacity Account." Before discussing this, however, a few words might be said as to what we mean by a "NORMAL" Cost. We must distinguish between a "NORMAL"

* From *The Cost Accountant.*

and a "STANDARD" Cost. In speaking of costs, language is frequently used loosely. For instance a leading paper says the cotton trade must be prevented "from the sale of goods at prices below the cost of production." Yes—but what *is* the cost of production? The average business man is constantly using terms without defining them, but we scarcely expect this of a great journal. We are frequently reminded that we English are not an intellectual people and, of course, exact definition requires considerable acuteness.

Behind this possible intellectual ineptness sometimes lurks also a sort of half-conscious suspicion that sleeping dogs are best let lie; and the question of what we really mean by "cost of production" therefore is not pressed. I would suggest that we shall mean by "Normal" the actual average cost of direct material and labour applied to a job, and a proportion of the Standing Charges *in accordance with the time actually spent on that job*. This sounds simple, but in practice there are many difficultties to be encountered.

There are two by-products of idle time which I will mention simply to dismiss from present detailed consideration:—

(a) Extra waste of material;

(b) "Soldiering" or whatever we agree to call the deliberate dragging out of jobs by workmen.

In the case of material, there is frequently more waste in a Works which is only partially employed than in one which is going full time. It may be that in estimating a "Normal" cost, this extra cost due to waste of material will have to be included. There are good reasons in fact for doing so.

When the Workman Lags

With regard to labour, it is notorious that the workman does not work so quickly or so well when he has only a limited output to look forward to as when there is no apparent end to the possibilities of production. Here, however, for the purpose which we are considering, the actual average unit cost of this labour, weighted though it may be owing to some human slackness in working, should be taken as a charge to the process and product. Because here we must remember the difference between a *Normal* Cost on the terms which I am advocating and a *Standard* Cost, which is something quite different. The *Standard* Cost should be arrived at by taking the amount of material required under the *best* conditions, and the labour cost for the *best* workman under the *best* conditions, and the sequence of processes and method of manufacture under the most enlightened management. It is obvious that these costs would produce the best possible estimate of what a Works should do. But these figures, difficult to attain, do not reflect what has actually happened and cannot be the basis for selling. The theory I am advocating endeavors to arrive at a more actual work-a-day Normal Cost under the conditions of the average British workman.

These last remarks, however, are somewhat of an interpolation, and we must proceed to the two other charges, most closely associated with the running of a modern plant, viz., Power and Standing Charges. In the pre-machine era, when Labour was executed with primitive tools, this problem of idle time was not so acute. It is essentially a problem of the factory system with its increasing accumulations of costly buildings and steam or electrically-driven plant on human capital, such as this, in which immense sums have been sunk, might theoretically be earning money night and day. It is not subject to fatigue. Rents and rates are accuring every minute of the day and night; so also, to some extent at least, depreciation is taking place. The longer the plant may be kept running, the better; whether by two shows nightly, as in the music halls, or by two or three shifts in the twenty-four hours.

These fixed charges must be spread, however, over a *normal* working day, whatever that may be. The reduction of the working week from 56 to 48 hours was equivalent to an increase per hour in fixed charges of about 14 per cent, and as with expensive plants these charges are heavy this alone meant an increase in price, because in many trades the speed of production is governed by machinery and that machinery was already working at its full capacity. It is in dealing with idle plant that the treatment of idle time becomes prominent and that the utility of the Idle capacity Account really manifests itself. Let us deal with Standing Charges first.

Dealing With Standing Charges

From my point of view the problem is a simple one. I assume that all Standing Charges (including Management Salaries and Fixed Wages, and Interest on Capital) have been departmentalized, and converted into either Machine Hour Rates or Departmental Hour Rates. This once done, the remaining procedure is simple.

Obviously, all we want is a record of the working hours and the standing hours of each department or machine. The charge to the Process is then at so much per hour for the working hours: that to the Product on the time actually occupied in each department. The charge for the Idle Time is carried to the "Idle Capacity Account." In modern bookkeeping, of course, it is not necessary to introduce technically "Ledger" Accounts for these things, but for the sake of simplicity, I talk in Ledger Account terms.

The introduction of this account with this significant title is the only scientific solution of the problem we are considering: this cannot be done unless the works is departmentalized and proper time records are taken.

Let us come now, however, to the question of the idle capacity of the Power Plant, which I admit is more difficult. The reason of the difficulty in dealing with Power is that the cost of Power, when expressed as a unit of production, does not vary directly with time. It is not like Standing Charges accruing all the time whether the Works is running or not. Neither, in many trades, is it necessarily the same per production unit all the time a Works is working. It depends upon *how* the Works is running. If, for a few months, a Works is running one week and stopped the next, the cost of power during the running weeks may be the ordinary Normal Cost, though over the whole period these alternate weeks would only amount to 50 per cent of its normal running time. During the second week, some steam may be utilized for heating or other purposes, but there would be no production against which to charge it.

Charged to Idle Capacity

This latter cost is clearly a charge to "Idle Capacity." This, however, is a comparatively simple illustration; the real difficulties with regard to Power arise when a whole Works is running on irregular short time or individual departments are running short time intermittently. In these cases, more steam is being produced than is being used. Another kind of Idle Capacity is occurring in the lack of balance between the power output and that utilized. Both the capacity for steam generation and the steam actually generated may be much greater than that needed, but it is unfair to charge a process more than the process needs and takes. Here, frankly, the problem in practice is difficult, but, to my mind, the *theory* is again not essentially difficult. The method I advocate, again, is the departmentalization of power costs. This can only be done by an Engineer, and even he will find it difficult, particularly when steam is used, not only for driving, but for boiling, heating, drying, etc.

It is possible to make some estimate, perhaps by meter, of the normal pounds of steam per hour required for each of these purposes by a department or by a machine. The method, I suggest, is to charge the Power Plant with Standing Charges for the time the boilers are working at Normal pressure, to assume that this quantity of steam has been taken by each department during its working hours, to assume that each pound of coal consumed produces so many pounds of steam, at a cost therefore of so much per pound of steam, to charge out the power assumed to be taken by each process at this cost, and the balance between the addition

of these departmental charges and the total cost of Power is *"Idle Capacity"* and a charge to that account.

The Power Account would therefore read something like this:

Coal Consumed: Weight .....Tons .....
Lbs. of steam produced, per boiler feed water meter .....Lbs. .....
Normal Generation Cost:.....$.....
Coal Consumed: Value ....
Cartage ....
Weekly Wages ....
Oncost .....Boiler Working Hours.....
at ..... per Hour .....

Total Normal Generation Cost ....

C $.....
or per lb. of Steam produced .....$.....

Idle Capacity Account-Power:
Oncost .....Boiler Idle Hours
at .....per Hour.....
Cost of Steam unaccounted for:
Being difference between:
Lbs.
Lbs. of Steam produced
Lbs. of Steam utilized in Process, plus Radiation, Leakage, Banking, Losses, etc.

Leaving lbs. unaccounted for

at cost per lb. produced as above .....C .....
Total Power Charge to Idle .....

Losses by radiation, leakage, etc., need dealing with in each individual case on their own merits, but when this is done by this method, one gets a normal charge to the process and the product for the use of Power and does not overcharge either the process or the product with steam produced but unused through the idleness of some other part of the Works.

The Use of the Resultant Figures

I contend that this method of accounting, introducing the separate Idle Capacity Account, is of great use in three ways:

1.—Criticism of the total productive costs of a Works is not tripped up at the outset by an unknown quantity of an unwanted factor. So far as Power and Standing Charges are concerned the inconstant factor produced by Idle Time is thrown out, and therefore, in comparisons, particularly if one is conparing one Works with another, working different proportions of their time, one is still comparing working costs on a similar basis. This, of itself, is a great benefit compared with the old system.

2.—This system throws the whole of the plant charge for idle time into one account for further investigation. The account may be prepared in tabular form, showing the name of the department or process on the left-hand side of the sheet, with a column for each of, say, six months. From this, one can see precisely where the Idle Time is taking place and the cost of it. It may show that certain departments or machines are only employed in erratic spasms; perhaps that what was once thought to be a brilliant idea—some new machine—is in reality a white elephant; or it may show very vividly that congestion is taking place in certain parts of the Works. This information, likewise, is of the greatest value to a Works Manager, who wishes to substitute facts and figures in place of vague recollection and conjecture.

3.—It is the only rational way, particularly in slack times, of building a selling price on costs. In estimating for a selling price, the normal cost may be stated and the further charge for Idle Capacity shown separately. What the Selling Manager is going to do with these extra charges for Idle Capacity introduces problems of the greatest importance, ethically and economically, but again these are problems with which, simply as a Cost Accountant, I can hardly be expected to deal. They are for the economist, the business man and the citizen. Their nature may just be indicated, namely:

A—If an industry is to keep its head above water during an extended period of slack time, almost certainly some of this charge must be passed on to the consumer.

B—If too much of this charge is passed on to the consumer, the way is open for an enterprising competitor, unencumbered with a similar heavy charge, to get the business at a reduced price.

C—The danger of this competition is more marked still in the case of a foreign competitor, already perhaps by preferential tariff or the course of exchange, in a more favorable position to compete, if there is added to the normal cost a charge representing the cost of idle plant in the home country.

And I may close with asking a question suggested by the subject: To what extent should a consumer support an industry over-equipped for his wants?

Trade-Marks Department

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The following are trade-mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

E. & D. FILTER PAPER—with fanciful design—No. 194,697. The Eaton-Dikeman Company., Lee, Mass. For filter paper.

GLASSAD—No. 191,274. McLaurin-Jones Company., Brookfield, Mass. For gummed papers and especially gummed papers and especially gummed paper adapted to be printed or lithographed on the gummed side.

ZIP—No. 201,571. The Macey Company, Ltd., Glasgow, Scotland. For bound loose-leaf books.

OLD BANDANA BOND—with picture of a man—No. 201,094. Louisville Paper Company, Louisville, Ky. For stationery.

KIDDYLAND—No. 200,970. Leroi B. Torrey, Medford, Mass. For paper, envelopes, and cards.

WAYAGAMACK—with fanciful picture of an Indian girl in a canoe—No. 199,962. Wayagamack Pulp & Paper Company, Ltd. Three Rivers, Quebec, Canada. For wrapping paper, writing paper, kraft papers and envelopes.

TRAVOFILE—No. 199,906. The Stephenson Specialty Company, Hartford, Conn. For filing devices, and particularly, portable files.

READ'S PROTECT-O BASKET LINER—No. 198,678. F. A. Read, Inc., New York City. For paper devices for lining fruit receptacles, such as crates and baskets.

PEARLWOOD GREETING—No. 198,321. Messinger Paper Company, Chicago, Ill. For stationery.

HOPEWELL KRAFT—with the representation of a ship—No. 197,377. Hummel-Ross Fibre Corp., Hopewell, Va. For wrapping papers.

Specialties Paper Co. Assigns

HOLYOKE, Mass., November 25, 1924.—An assignment for the benefit of creditors was made Friday by the Specialties Paper Company, a concern that has been operating in this city for several years, to Attorney Russell L. Davenport of the firm of Avery Gaylord & Davenport. A statement of the assets and liabilities will be sent direct to the creditors. The company was organized by Lester Winchenbaud of Boston. The American Writing Paper Company is one of the largest creditors.

INDUSTRIAL POWER*

By M. D. Church, Chief Engineer, Terry Steam Turbine Company, Hartford, Ct.

One very important element in conserving fuel is proper coordination between the Industrial Plant and the Public Service Company. In many cases we find Industrial plants making their own power wastefully because of unfavorable location, small size of plant or improper power apparatus. In other instances we find industries purchasing all of their power from a Central Station and at the same time putting large quantities of steam through reducing valves for use in process work, instead of developing power on the pressure drop which takes place in the reducing valve.

One of the fundamental reasons why we find such conditions is that the question of making or buying power in an industrial plant is usually considered in the light of making all power or purchasing all power. The question should be what proportion of power should be made and what proportion should be purchased.

In general, if the heating load, or the demand for low pressure steam for cooking or process work, is fairly large, and it is necessary to either buy all power or make all power the chances are that the latter will prove more favorable, especially if condensing water is available, so bleeder turbines can be used. With non-condensing plants, however, where the exhaust steam cannot be largely used it will generally pay to buy power if the Public Service Company can supply reliable service at fair prices.

Regarding Power Service

Large economical Public Service plants produce a KW Hr., at their own switch boards for 1.5 pounds of coal, or less, on a yearly average. The smaller and less efficient stations use up to 2.5 pounds or more. The larger and more economical industrial plants running condensing under favorable conditions produce power as economically as most Public Service plants, being in many cases favored by exceptionally good load factors. The non-condensing industrial plant, when the exhaust steam is not used and, therefore, all the fuel is chargeable to power, seldom uses less than 3½ pounds of coal per KW Hr. and frequently much more.

When the exhaust steam can be used, however, the case becomes very different. If high pressure steam is reduced by being put through an engine or turbine instead of using a reducing valve, the only heat which it gives up is the heat turned into work plus radiation and the heat equivalent of the losses external to the steam spaces such as bearing friction and fly-wheel windage. The internal losses all convert mechanical energy into heat and the heat remains in the exhaust steam.

To produce one KW Hr. of electrical energy, therefore, with a turbo generator the exhaust steam from which is used, will take heat from the steam approximately as given below.

B. T. U. Equivalent of 1 KW Hr. =	3412
Allowance for Radiation=	200
Bearing Friction, etc.=	50
Alternator losses, say 8%=	273
Total	3935 B. T. U.

Without assuming great accuracy, therefore, we may conservatively say that KW Hr. may be produced with a reduction of not over 4,000 BTU in the heat contents of the steam.

The extra coal required per KW Hr. may be found as follows:

$$\text{Coal per KW Hr.} = \frac{4000}{H\,E}$$

Where E= effciency of boiler and furnace.
H= BTU per pound of coal.

As an example, if boiler efficiency is 65 per cent and the coal contains 14,000 BTU per pound;

$$\text{Coal per KW Hr.} = \frac{4000}{.65 \times 14000 = 0.44 \text{ lbs.}}$$

This is far less than the coal consumption of any condensing plant no matter how efficient and the reason is that no heat is rejected to the condenser.

Effect of Steam Rate

It will be noted that the steam rate of the engine does not appear in the above formula. Within reasonable limits the steam rate has small effect on the coal per KW Hr. as the only factors affected are the allowances for radiation, bearing friction, etc., which are small in any normal case and are included in the approximate factor 4000.

Let us not conclude, however, that steam rate is of no importance. The lower the steam rate the greater the power output we can obtain from a given steam flow and power so efficiently generated should be produced in the largest possible measure.

There are few possibilities of coal saving which offer a larger return in proportion to the investment than can be realized from harnessing our steam falls in the same manner we are undertaking to do with our water falls. The istallation costs and, in most cases the operating costs, will be far less in the case of the steam falls.

In order to do this most efficiently it is necessary in most cases that the generating unit be linked up with other sources of power so that they may produce at all times just the amount of power that they can produce economically. Control apparatus is now available for use on steam turbines which automatically controls the load carried by the turbine to exactly proportion the steam flow to the requirements for exhaust steam. This apparatus can be made responsive to either the pressure in the exhaust line or the temperature in a fluid heated by the exhaust steam. Sufficient installations have been made to prove the practical working of the control apparatus. As an example of this, in a large rubber works in Akron, Ohio, the steam for heating one group of buildings is reduced in pressure from 150 lbs. to 5 lbs. by passing it through a turbo generator set with back pressure control. The pressure on the heating line is held practically constant regardless of variations in the demand for heating steam and the KW output varies from 125 KW to 800 KW depending on the requirements for heating steam.

Often Pays to Buy Power

Many plants which make all their own power at some profit can make more profit if they will buy part of their power. This is especially true of non-condensing plants, because their loss in carrying the summer load may largely offset the profit made during the winter. If they can make an arrangement with their Public Utility which will allow them to make as much of their own power as will give them sufficient exhaust steam for heating and purchase the balance, there will be a large fuel saving. The Public Utility will obtain a valuable load with a summer peak and a winter valley. The difficulty in making such arrangements at the present time seems to be for the Public Utility management and the plant owner to be able to agree on how they shall share the possible savings. It is hoped that progress may be made in inter-connection between industrial plants and central stations as by this means very great fuel savings can be made.

Another interesting application is at a paper mill in New England. I believe they generate something like 20,000 kilowatts, as they supply power for the town in which they are located. They

(*Continued on page* 100)

* From *Engineers and Engineering.*

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North Philadelphia Station, Penna. R. R., Phila., U. S. A.

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING NOVEMBER 22, 1924

SUMMARY

News print .....866 rolls
Printing paper.....170 cs., 231 bls., 232 rolls
Wall paper.....1,745 bls., 91 rolls, 27 cs.
Wrapping paper.....1,993 rolls, 269 bls., 30 cs.
Cigarette paper .....78 cs.
Writing paper .....15 cs.
Tissue paper .....24 cs.
Filter paper .....48 bls.
Surface coated paper.....108 cs.
Hanging paper.....1,167 rolls, 113 bls.
Kraft paper.....122 rolls
Emery paper .....56 cs.
Baryta coated paper.....26 cs.
Paper hangings.....55 bls., 2 cs., 15 crates
Printed paper .....18 cs.
Copy paper .....6 cs.
Note paper .....3 cs.
Drawing paper .....4 cs.
Colored paper .....68 cs.
Packing paper.....21 cs., 687 rolls, 43 bls.
Cardboard paper .....25 cs.
Photo paper .....4 cs.
Decalcomania paper .....5 cs.
Stencil paper .....10 cs.
Cellophane paper .....4 cs.
Litho paper .....40 cs.
Silk paper .....6 cs.
Miscellaneous paper.....160 cs., 374 bls., 616 rolls

CIGARETTE PAPER

F. P. Gaskell & Co., Indep. Hall, Havre, 20 cs.
Standard Products Corporation, by same, 40 cs.
Liggett & Myers Tobacco Company, by same, 18 cs.

WALL PAPER

F. J. Emmerich, Adriatic, Liverpool, 19 bls.
A. C. Dodman, Jr., Inc., by same, 25 bls.
J. W. Hampton, Jr., & Co., Gaasterdyk, Rotterdam, 272 bls.
J. W. Hampton, Jr., & Co., Rotterdam, Rotterdam, 1,413 bls.
A. C. Dodman, Jr., Inc., Zeeland, Antwerp, 16 bls.
H. Reeve Angel & Co., Inc., Pr. Harding, Bremen, 91 rolls.
Whiting & Patterson, Berengaria, Havre, 7 cs.
Guibout Freres, by same, 20 cs.

PRINTING PAPER

Paul Puttmann, Naperian, Hamburg, 58 cs.
B. F. Drakenfeld & Co., Adriatic, Liverpool, 7 cs.
T. D. Downing & Co., America, Bremen, 10 cs.
C. Steiner, by same, 5 cs.
H. Reeve Angel & Co., Inc., by same, 48 cs.
National City Bank, J. Laurent, Antwerp, 40 cs.
Aaronson Brothers, Mongolia, Hamburg, 231 bls.
W. Hartman & Co., by same, 232 rolls.
Paul Puttmann, Zeeland, Antwerp, 2 cs.

NEWS PRINT

Parsons & Whittemore, Muenchen, Bremen, 511 rolls.
Chemical National Bank, by same, 164 rolls.
H. Reeve Angel & Co., Inc., America, Bremen, 22 rolls.
Norwegian Paper Mills Agency, Bergensfjord, Kristiania, 169 rolls.

SURFACE COATED PAPER

L. de Jonge & Co., Naperian, Hamburg, 7 cs.
Globe Shipping Company, America, Bremen, 51 cs.
P. Puttmann, Zeeland, Antwerp, 50 cs.

COLORED PAPER

C. W. Williams, Zeeland, Antwerp, 36 cs.
Borden Riley Paper Company, by same, 8 cs.
Overton & Co., America, Bremen, 6 cs.
C. W. Williams, Naperian, Hamburg, 18 cs.

WRAPPING PAPER

F. C. Strype, Naperian, Hamburg, 14 cs., 2 rolls.
Rahm, Lachmann & Co., America, Bremen, 238 bls.
C. K. MacAlpine Company, Kungsholm, Gothenburg, 210 rolls, 9 bls.
Fuller Morrison Company, by same, 1,482 rolls.
D. S. Walton & Co., by same, 299 rolls, 22 bls.
E. Dietzgen & Co., Mongolia, Hamburg, 9 cs.
C. Steiner, Rotterdam, Rotterdam, 7 cs.

CARDBOARD PAPER

F. C. Strype, Rotterdam, Rotterdam, 25 cs.

KRAFT PAPER

Arkell Safety Bag Company, Kungsholm, Gothenburg, 122 rolls.

TISSUE PAPER

G. W. Sheldon & Co., Adriatic, Liverpool, 24 cs.

PHOTO PAPER

J. J. Gavin, Adriatic, Liverpool, 2 cs.
Hensel, Bruckman & Lorbacher, La Savoie, Havre, 2 cs.

FILTER PAPER

A. Giese & Son, Roussillon, Bordeaux, 48 bls.

DECALCOMANIA PAPER

C. W. Sellers, America, Bremen, 5 cs.

STENCIL PAPER

First National Bank, Orca, Hamburg, 10 cs.

CELLOPHANE PAPER

O. G. Hempstead & Son, Homeric, Havre, 4 cs.

LITHO PAPER

B. C. Ritchie, Pr. Van Buren, Hong Kong, 40 cs.

SILK PAPER

Phoenix Shipping Company, Rotterdam, Rotterdam, 6 cs.

PAPER

C. Steiner, Rotterdam, Rotterdam, 7 cs.
Gevaert Company of America, Zeeland, Antwerp, 5 cs.
F. J. Emmerich, La Savoie, Havre, 3 bls.
J. W. Hampton, Jr., & Co., by same, 2 cs.
A. L. Diament & Co., by same, 2 cs.
M. M. Cohen, Kungsholm, Gothenburg, 115 rolls, 68 bls.
J. W. Banker, by same, 45 bls., 161 rolls.
Miller Paper Company, by same, 326 rolls, 10 bls.
Blauvelt, Wiley Paper Manufacturing Company, by same, 14 rolls.
Mugler & Umlauf, by same, 56 bls.
E. H. Sergeant & Co., by same, 1 cs.
Perry, Ryer & Co., Assyria, Glasgow, 138 cs.
Perkins, Goodwin & Co., Liverpool, Maru, Hamburg, 192 bls.
Whiting & Patterson, Berengaria, Southampton, 5 cs.

RAGS, BAGGING, ETC.

Stone Brothers Company, Adriatic, Liverpool, 13 bls. rags.
M. O'Meara Company, America, Bremen, 56 bls. rags.
E. J. Keller Company, Inc., Gaasterdyk, Rotterdam, 162 bls. rags, 72 bls new cuttings.
S. Birkenstein & Sons, by same, 135 bls. bagging.
Chemical National Bank, by same, 25 bls. rags.
Atterbury & McKelvey, by same, 39 bls. rags.
S. Shapira & Son, by same, 48 bls. rags.
Atlas Waste Manufacturing Company, by same, 38 bls. rags.
P. Berlowitz, J. Laurent, Antwerp, 394 bls. rags.
Metro. Stamp Company, Aurania, Liverpool, 18 bls. waste paper.
G. A. Reed, Incemore, Barrow, 39 bls. cotton waste.
Equitable Trust Company, by same, 95 bls. bagging.
Brown Brothers & Co., Incemore, Belfast, 13 bls. rags.
E. J. Keller Company, Inc., Georgia, Trieste, 104 bls. rags.
E. J. Keller Company, Inc., Deutschland, Hamburg, 223 bls. new cuttings, 81 bls. bagging, 184 bls. rags.
E. Butterworth & Co., Inc., Nessian, Manchester, 84 bls. bagging, 144 bls. waste paper.
Bank of New York, by same, 40 bls. new cuttings.
Brown Brothers & Co., by same, 17 bls. new cuttings.
Katzenstein & Keene, Inc., by same, 70 bls. new cuttings.
First National Bank of Boston, by same, 53 bls. cotton waste.
Royal Manufacturing Company, by same, 130 bls. cotton waste.
Leigh Textile Company, by same, 17 bls. cotton waste.
Brown Brothers & Co., by same, 31 bls. cotton waste.
Brown Brothers & Co., Assyria, Glasgow, 35 bls. paper stock, 43 bls. bagging.
Anglo South American Trust Company, by same, 160 bls. rags.
Guaranty Trust Company, by same, 35 bls. rags.
Brown Brothers & Co., Chicago City, Bristol, 223 bls. rags.
E. Butterworth & Co., Inc., Rotterdam, Rotterdam, 22 bls. bagging.
M. O'Meara Company, by same, 26 bls. bagging.
Equitable Trust Company, Zeeland, Antwerp, 224 bls. flax waste.

OLD ROPE

E. J. Keller Company, Inc., Gaasterdyk, Rotterdam, 52 coils.
Brown Brothers & Co., by same, 50 coils, 100 bls.
Brown Brothers & Co., Assyria, Glasgow, 93 coils.
Brown Brothers & Co., Chicago City, Bristol, 171 coils.
Brown Brothers & Co., Marengo, Hull, 106 coils, 9 bls.
Brown Brothers & Co., Marengo, Newcastle, 210 coils.
E. J. Keller Company, Inc., Marengo, Manchester, 272 coils.
Brown Brothers & Co., Rotterdam, Rotterdam, 145 bls.
Brown Brothers & Co., Zeeland, Antwerp, 109 coils.
D. M. Hicks, Muenchen, Bremen, 193 coils.

WOOD PULP

Castle & Overton, Inc., Naperian, Hamburg, 2,180 bls.
Castle & Overton, Inc., Orca, Hamburg, 715 bls.
Tidewater Papermills Company, Bornholm, Liverpool, N. S., 12,657 bls.
Tidewater Papermills Company, Bratland, Magdalen River, 2,550 tons.
Tidewater Papermills Company, Stella, Murray Bay, 5,517 bls.
M. Gottesman & Co., Inc., Gaasterdyk, Rotterdam, 1,000 bls.
M. Gottesman & Co., Inc., Kungsholm, Gothenburg, 1,250 bls.
Price & Pierce, Ltd., by same, 2,375 bls.
E. M. Sergeant & Co., Bergensfjord, Kristiania, 145 bls.
Nilsen, Lyon & Co., Inc., by same, 2,000 bls.
Irving Bank Columbia Trust Company, Pr. Wilson, Trieste, 206 bls.
National City Bank, Liverpool Maru, Hamburg, 1,963 bls.
Bulkley, Dunton & Co., Muenchen, Bremen, 2,900 bls.
Bulkley, Dunton & Co., ———, Minnekahda, 2,056 bls.
Bulkley, Dunton & Co., ———, Brattsberg, 1,625 bls.
Bulkley, Dunton & Co., ———, Columbus, 475 bls.

WOOD PULP BOARDS

Lagerlof Trading Company, America, Bremen, 1,357 bls., 224 tons.
Lagerlof Trading Company, Muenchen, Bremen, 234 bls.

WOOD FLOUR

B. L. Soberski, Bergensfjord, Kristiania, 1,500 bags.
B. L. Soberski, Rotterdam, Rotterdam, 752 bags.

CHINA CLAY

National City Bank, Chicago City, Bristol, 335 bags.
C. B. Richard & Co., by same, 226 bags.
Central Union Trust Company, by same, 133 casks.

(Continued on page 92)

A Remarkable Range of Grades, Textures and Weights

Orr Endless Felts can now be obtained up to 86 feet in length.

With our enlarged new equipment we can now furnish Paper Manufacturers with endless felts up to 86 feet in length.

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HOLYOKE, MASS.
Since 1878.

Fourdrinier Wires

Dandy Rolls

Cylinder Covers **Best Quality Always**

Imports of Paper and Paper Stock

(Continued from page 90)

PHILADELPHIA IMPORTS

WEEK ENDING NOVEMBER 22, 1924

J. H. Scott Paper Company, Naperian, Hamburg, 169 bls. paper.

Corn Exchange National Bank, Liverpool Maru, Hamburg, 67 cs. surface coated paper.

Stone Brothers Company, Naperian, Hamburg, 112 bls. rags.

Textile Waste Material Company, by same, 140 bls. rags.

Castle & Overton, Inc., by same, 125 bls. rags.

E. J. Keller Company, Inc., by same, 490 bls. rags, 58 bls. flax waste.

Philadelphia National Bank, by same, 342 bls. rags.

National City Bank, by same, 140 bls. rags.

L. H. Abenheimer, by same, 68 bls. rags.

Darmstadt, Scott & Co., by same, 42 bls. rags.

A. Stern, by same, 183 bls. rags.

A. Hurst, by same, 24 bls. rags.

True & McClelland, Incemore, Barrow, 58 bls. cotton waste.

J. A. Steer, by same, 37 bls. rags.

Atlantic Exchange Bank & Trust Company, Liverpool Maru, Hamburg, 55 bls rags.

Castle & Overton, Inc., by same, 241 bls. rags.

Equitable Trust Company, by same, 74 bls. rags.

Katzenstein & Keene, Inc., M. Merchant, Manchester, 57 bls. new cuttings.

Katzenstein & Keene, Inc., London Commerce, London, 452 bls. rags.

E. J. Keller Company, Inc., Fenchurch, Marseilles, 150 bls. rags.

E. J. Keller Company, Inc., Editor,-Havre, 545 bls. rags.

E. J. Keller Company, Inc., Sahale, Rotterdam, 167 bls. rags.

Castle & Overton, Inc., Sahale, Antwerp, 112 bls. rags.

Castle & Overton, Inc., Eastern Victor, Rotterdam, 145 bls. rags.

Castle & Overton, Inc., Iderwald, Hamburg, 107 bls. rags.

Castle & Overton, ———, Germany, 960 bls. wood pulp.

Castle & Overton, Sahale, Holland, 252 bls. wood pulp.

Bulkley, Dunton & Co., ———, Christian Bors, 1,100 bls. wood pulp.

Bulkley, Dunton & Co., ———, Nienburg, 125 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING NOVEMBER 22, 1924

Castle & Overton, Inc., ———, Germany, 275 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING NOVEMBER 22, 1924

Castle & Overton, Inc., West Chetac, Spain, 67 bls. bagging.

BALTIMORE IMPORTS

WEEK ENDING NOVEMBER 22, 1924

M. Gottesman & Co., Inc., Liverpool Maru, Hamburg, 700 bls., 106 tons wood pulp.

National City Bank, by same, 7,671 bls., 1,132 tons wood pulp.

Castle & Overton, Inc., ———, Hamburg, 1,100 bls. wood pulp.

G. M. Graves Company, Liverpool Maru, Hamburg, 80 bls. rags.

A. Jacob & Co., Indep. Hall, Dunkirk, 48 bls. rags.

A. Jacob & Co., Indep. Hall, Havre, 475 bls. rags.

Johaneson, Wales & Sparre, Inc., Christiania, Mexicana, 1,000 bls. sulphite.

Johaneson, Wales & Sparre, Hamburg, Monticello, 600 bls. sulphite.

Bulkley, Dunton & Co., Christian Bors, 1,250 bls. wood pulp.

Bulkley, Dunton & Co., Eros, 1,250 bls. wood pulp.

Bulkley, Dunton & Co., Landvard, 500 bls. wood pulp.

Bulkley, Dunton & Co., Hornfels, 2175 bls. wood pulp.

Bulkley, Dunton & Co., Nienburg, 750 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING NOVEMBER 22, 1924

Brown Bros. Company, s. s. Menominee, London, 71 bales wastepaper.

E. Butterworth & Co., by same, 61 bales paperstock, 45 bales old rope.

Baring Bros. Ltd., by same, 192 bales old rags.

N. H. Garvey & Co., by same, 1 roll gummed paper.

Equitable Trust Company, by same, 212 bales wastepaper.

Guaranty Trust Company, by same, 77 bales wastepaper.

Crocker Burbank & Co., by same, 223 bales wastepaper.

On order by same, 24 bales paperstock, 124 bales rags.

G. M. Graves & Co., Inc., by same, 111 coils old rope.

Brown Bros., Company, by same, 519 bales old rope.

Anglo-South American Trust Co., by same, 20 bales old rope.

On order by same, 24 bales old rope.

First National Bank, by same, 28 bales old rope.

Merchant's National Bank, by same, 13 bales old rope.

National Shawmut Bank, by same, 49 bales old rope.

On order, by same, 13 bales old rope.

Crocker Burbank & Co., by same, 178 bales wastepaper.

B. D. Rising Paper Company, by same, 14 bales old rags.

Phila customer, by same, 50 bales old rags, 23 bales paperwaste.

International Acceptance Bank, s. s. Baden Maru, Hamburg, 179 bales old rags.

On order, by same, 40 bales old rags.

National City Bank, by same, 31 bales new rag cuttings

Hudson City Bank, by same, 40 bales old rags.

On order, by same, 47 bales old rags.

Equitable Trust Company, by same, 572 bales wastepaper.

Happel & McEvoy, by same, 20 bales strawboard.

On order, by same, 125 bales old rags.

Mechanics & Metals National Bank, by same, 500 bales bleached sulphite pulp.

Maurice O'Meara, by same, 10 cases Parchment paper.

On order, by same, 160 bales bleached straw pulp and 1131 bales dry chemical woodpulp.

Anglo South American Trust Company s. s. Davisan, Manchester, 15 bales new rag cuttings.

Baring Bros., Ltd., by same, 64 bales old rags, 111 new rag cuttings.

T. D. Downing & Co., by same, 160 bales new rag cuttings.

Baring Bros., Ltd., by same, 57 bales old bagging.

On order, by same, 108 bales old rags.

Baring Bros., Co., by same, 21 bales old rags.

G. H. Malcolm, by same, 12 cases tissue paper.

Brown Bros., Co., by same, 53 bales old rope.

Baring Bros., Ltd., by same, 25 bales old bagging.

The Borregaard Co., s. s. Mexicano, Scandinavia, 325 bales dry bleached sulphite pulp.

Buck, Kiser & Co., by same, 280 bales dry sulphite pulp.

J. Andersen & Co., by same, 3648 bales dry sulphite woodpulp.

Nilsen Lyon Co., by same, bales dry chemical woodpulp.

Atterbury & McKelvey, by same, 750 bales dry sulphite pulp.

Brown Bros., Co., by same, 73 coils old rope.

J. Anderson & Co., by same, 252 bales dry sulphite woodpulp.

Norfolk Ledger & Dispatch, by same, 300 reels newprintpaper.

Atterbury & McKelvey, by same, 2700 bales dry bleached sulphite woodpulp.

The Borregaard Company, by same, 900 bales dry unbleached sulphate woodpulp.

J. Anderson & Co., Inc., by same, 660 bales dry bleached sulphite woodpulp.

Atterbury & McKelvey, by same, 750 bales dry bleached sulphite woodpulp.

Kidder, Peabody Accep. Corp., by same, 2,000 bales dry sulphite woodpulp.

Johansen Wales & Sparre Inc., by same, 1000 bales dry prime unbleached sulphite pulp.

Perkins-Goodwin Company, by same, 2100 bales dry chemical woodpulp.

National City Bank, by same, 2720 bales prime kraft woodpulp.

Brown Bros., Co., by same, 1600 bales airdry sulphite pulp.

Lee Higginson & Co., by s. s. Westpool, Hamburg, 30 bales old rags.

On order by same, 122 bales old rags.

Drinhausen & Hollkott Paper Co., by same, 432 reels paper.

Castle & Overton, by same, 275 bales wastepaper.

Ira L. Beebe, by same, 525 bales wastepaper.

Chemical National Bank, by same, 87 reels paper.

On order by same, 500 bales wastepaper.

Ira L. Beebe, by same, 700 bales wastepaper.

Castle & Overton, by same, 960 bales wastepaper.

Howell Donaldson & Co., by same, 100 bales wastepaper.

Castle & Overton, by same, 1625 bales wastepaper.

Chemical National Bank, by same, 102 reels paper.

Irving Bank-Columbia Trust Company, by same, 43 reels paper.

American Paper Company, by same, 152 rools paper.

On order 585 bales paper, 1310 reels paper, 6 bales paper and 32 rolls paper.

E. Naumberg & Co., by same, 653 rolls paper.

Kidder Peabody Accep, Corp. s. s. Barbadian, London, 31 bales old rags.

T. D. Downing & Co., by same, 79 bales old rags.

National City Bank, by same, 274 bales old rags.

On order by same, 228 bales old rags.

F. Banikhin, s. s. Fiona, St. John, N. B., 80 bales cotton cuttings, 10 bales bagging, 50 bales old rope and canvas.

Star Company of N. Y., s. s. West Inskip, Rotterdam, 1305 rolls newspaper.

Boston Herald, by same, 199 rolls newspaper.

Boston Production Company, by same, 1070 rolls newspaper.

The Borregaard Company, by same, 500 bales dry chemical woodpulp.

On order by same, 250 bales dry sulphite woodpulp.

Turustrom Paper Co., Inc., by same, 94 bales paper.

Castle & Overton, by same, 767 bales wastepaper.

Drinhausen & Hollkott Paper Company, by same, 196 bales wrapping paper.

E. Butterworth & Co., by same, 60 bales old bagging.

On order by same, 42 bales new rags, 515 bales old rags.

W. H. Masson, by same, 279 bales old rags.

National Bank of Boston, by same, 111 bales old rags.

Hudson Trading Company, by same, 132 reels paper.

Congoleum Company, by same, 302 bales old rags.

Castle & Overton, by same, 625 bales wastepaper.

Chemical National Bank, by same, 102 reels newsprintpaper.

On order by same, 125 bales newsprintpaper.

Equitable Trust Company, by same, 664 reels newsprintpaper.

On order by same, 1196 rolls wrapping paper.

The Borregaard Company, by same, 1000 bales dry woodpulp.

Bulkley, Dunton & Co., Landvard, 3,500 bales woodpulp.

TEXAS GULF SULPHUR

99½ Per Cent Pure

Huge reserves, ample stocks of remarkably pure material and unexcelled service.

Texas Gulf Sulphur Company

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41 East 42nd Street, New York, N. Y.

Sulphur Deposit and Plant, Gulf, Matagorda County, Texas

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SAMUEL R. WHITING, Pres. and Treas.

Manufacturers of

LOFT DRIED PAPERS
LEDGERS
BONDS
WRITING PAPERS

Mill:—North Wilbraham, Mass.

Main Office:

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Cutters That Really Cut Costs As Well As Paper

"M&W" Cutters do that very thing.

Speed and accuracy—those are the two words that mean much to the Superintendent when he thinks of paper cutters. "M&W" Cutters are somewhat higher priced than other Cutters on the Market. That we will admit. Considering construction, quality of work produced, long life, they are a paying investment for the man who wants the best. Made in single, duplex and diagonal types.

THE MOORE & WHITE CO.

Established 1885

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PAPER MAKERS CHEMICAL CO.

WESTERN PAPER MAKERS CHEMICAL CO.

EASTON HOLYOKE KALAMAZOO
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CLAYS ROSIN SIZE
SATIN WHITE FOAM KILLER

FELT SOAP and OTHER SPECIALTIES

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Daily Capacity, 425 Tons

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GOVERNMENT PAPER BIDS AND AWARDS

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 26, 1924.—The Government Printing Office has received the following bids on 10,000 pounds pink sulphite writing paper, 21 x 32—36 No. 20: Reese and Reese, 8.59 cents per pound; R. P. Andrews Paper Company, 9.25 cents; Maurice O'Meara Company, 9 cents; Old Dominion Paper Company, 8.24 cents; and 8.63 cents; Baxter Paper Company, 8.85 cents; Barton, Duer and Koch Paper Company, 8.6 cents; American Writing Paper Company, 9.5 cents; Dobler and Mudge, 8.75 sents; Samuel S. Alcorn, 8.5 cents; Allied Paper Mills, 7.75 cents.

The Government Printing Office also received bids as follows for 5,400 pounds yellow sulphite writing paper, 21 x 32—36 No. 20: R. P. Andrews Paper Company, 9.25 cents per pound; Barton, Duer and Koch Paper Company, 8.4 cents; Old Dominion Paper Company, 8.39 cents; Dobler and Mudge, 9 cents; Reese and Reese, 7.85 cents; Allied Paper Mills, 7.75 cents; Samuel S. Alcorn, 8.25 cents; Import Paper Company, 9 cents; Baxter Paper Company, 8.2 cents, and 8.45 cents; Maurice O'Meara Company, 9 cents; American Writing Paper Company, 9.5 cents; and on 3,150 pounds light pink manifold bond paper, 24 x 38—31½ No. 13, the following bids were received: Barton, Duer and Koch Paper Company, 19.95 cents per pound; Old Dominion Paper Company, 21.24 cents; Dobler and Mudge, 23.5 cents; Reese and Reese, 19.95 cents; Baxter Paper Company, 16.85 cents; American Writing Paper Company, 18.5 cents.

Also the Printing Office received the following bids on 8,000 pounds of canary sulphite manifold paper, 21 x 32—16 No. 9: Barton, Duer and Koch Paper Company, $2.06 per ream; Mathers-Lamm Paper Company, $1.92 per ream and $2.09 and $2.72 and $2.66; Old Dominion Paper Company, $2.6128 and $2.715; Whitaker Paper Company, $2.08; Dobler and Mudge, $2.08; American Writing Paper Company, $2.08; Samuel S. Alcorn, $1.98; Import Paper Company, $2.18 less two per cent; Baxter Paper Company, $1.80; Maurice O'Meara Company, $2.04.

The Government Printing Office has received the following bids for 108,000 pounds of various sizes No. 20 white sulphite bond paper: Barton-Hobart Paper Company, 8.45 cents per pound; Virginia Paper Company, 9.80 cents; R. P. Andrews Paper Company, 6.95 cents; Mathers-Lamm Paper Company, 7.2 cents, 7.95 cents 9.2 cents and 7.24 cents; Whitaker Paper Company, 7.73 cents; Barton, Duer and Koch Paper Company, 8.88 cents; Old Dominion Paper Company, 7.719 and 7.4999 cents; Dobler and Mudge, 7.5 cents; Reese and Reese, 7.195 cents, and 7.31 cents; Baxter Paper Company, 8.95 cents; Maurice O'Meara Paper Company, 8.1 cents; Samuel S. Alcorn, 7.45 cents; Import Paper Company, 7.65 cents less 2 per cent; Graham Paper Company, 8.61 cents, and American Writing Paper Company, 7.77 cents.

The following bids also have been received by the Printing Office for 2,300 lbs. of 17 x 22, 23 white non-curling gummed paper: Whitaker Paper Company, $3.91 per ream; Mathers-Lamm Paper Company, $3.65 and R. P. Andrews Paper Company, $3.85; Nashua Gummed and Coated Paper Company, $3.60; Barton, Duer and Koch Paper Company, $3.70; Reese and Reese, $3.60; Old Dominion Paper Company, $3.64; C. J. Vennela and Company, $4.00; Eureka Specialty Printing Company, $3.70, $5.20 and $5.00 and $3.50.

Call for Bids

The Government Printing Office will receive bids on December 1, for 33,050 pounds (400 reams) of various sizes white lithograph finish map paper. Bids will also be received on the same date for 1,400 pounds of plate wiping paper in 4 and 8 inch rolls. Bids will also be opened on December 1 for 18,000 pounds of kraft wrapping paper in various sized rolls and for 31,400 pounds (400 reams) of various sizes flat kraft writing paper.

The Government Printing Office will receive bids on November 28 for 36,000 pounds (21,600 sheets) of 25 x 20, No. 2 quality binders board.

Dr. Klein Makes Report

WASHINGTON, D. C., November 26, 1924.—There was an increase of about 25 per cent in the number of inquiries relating to paper that were answered by the Paper Division says Dr. Julius Klein, Director of the Bureau of Foreign and Domestic Commerce, in his annual report to the Secretary. Discussing the work of the Division in detail Dr. Klein says:

John Matthews, Jr., continued as chief of the paper division. Much of the division's time was taken up in an endeavor to assist American producers in fighting European competition in the United States market. Conferences were attended in Washington, New York, and Chicago. The division has made a study of the production of pulp and paper in the principal European producing countries. Another important matter taken up by the division was the collection of samples of the various grades of waterproof case-lining paper made in the United States for the purpose of testing and developing a standard specification for inclusion in the transportation division's manual on export packing. The Bureau of Standards made the tests. The division also assisted the division of simplified practice in its program for elimination of waste in the paper industry.

Trade information bulletins were published discussing the markets for paper and paper products in Chili and Peru, in Mexico, and in Cuba. A supplementary study was made in Mexico to obtain facts relative to German competition on special grades of paper, the results being published in Commerce reports.

At the request of a large producer of waxed paper and candy wrappers, special lists giving the names and addresses of possible agents in the most important consuming centers of the world were furnished. Similar services were rendered to other manufacturers. Through information furnished by the commercial attaché at Tokyo, two large manufacturers of printing equipment were induced to send representatives to Japan to take advantage of the need for replacement of equipment destroyed by the earthquake. The patentee of a new material used in paper making was aided in the disposal of his patent rights in England. A large manufacturer was given special assistance in connection with the opening of an office in Shanghai. The division was instrumental in helping another large corporation to overcome difficulties in connection with a foreign government contract. Further revision of trade lists was taken up. The special monthly statistical service was expanded.

A few of the more important articles published in Commerce Reports were "Analysis of the United States paper exports during 1923," "The news print paper industry of the United States," "Exports of paper from United States during first quarter of 1924," and "Canadian pulp and paper exports in 1923." The report of paper exports from the United States published each month in Commerce Reports was continued through 1923-24. Numerous reprints of articles published in the "Paper" section of Commerce Reports appeared from time to time in newspapers and trade journals.

Southern Kraft Prices

NEW ORLEANS, November 22, 1924.—The range of prices on Southern Kraft during the past week as reported today by the mills to the Southern Kraft Manufacturers' Association is from $4.53 to $5.15 per hundredweight in carload lots, f. o. b. mills.

The Home of Quality

FACTORY
132ND TO 133RD ST & BROOK AVE

PAPER BAGS and SACKS

GLASSINE BAGS—SPECIALTIES

Operating a Modern Printing Plant

This Registered Trade Mark Octagon

on a Paper Bag vouches for Its Good Quality

SCHORSCH & CO.

Manufacturers *Established 1901*

500 East 133d Street . New York

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Papers:

Genuine Vegetable Parchment
For wrapping all moist and greasy foodstuffs.

Bread Wraps—Waxed Papers
For tight-sealing cartons and wrapping dry foods.

Bond and Ledger Papers
All standard sizes, weights and colors.

Handy Household Papers in Rolls
Ask and ye shall receive full information.

KALAMAZOO VEGETABLE PARCHMENT CO.
Manufacturers of PARCHMENT, WAXED and BOND PAPERS

KALAMAZOO, MICHIGAN
Where *Quality* is the watchword.

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300 Tons daily

Entire production of a group of mines under one management insures uniformity in quality and minimum production costs.

Let us submit samples and quote you.

AMERICAN MADE FOR AMERICAN TRADE

THE MINER EDGAR CO.

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FOURDRINIER WIRES

Dandy Rolls, Cylinder Molds,
Steel, Brass and Bronze
Wire Cloth
Bank and Office Railings.

CHENEY BIGELOW WIRE WORKS

Established 1842

SPRINGFIELD MASS.

A Speed Change Without Slip

"M&W" Speed Changes hold tight.
Transformers make it possible.

A Speed Change without slip. Doesn't seem possible, does it? Wouldn't be either were it not for the transformers over which the driving belt so easily rides—without slip or any appreciable loss of power. The transformers simply build up the cone to a cylinder. Where variation of speed is desired the Moore & White Speed Change will give it quickly, safely, economically.

THE MOORE & WHITE CO.

Established 1885

North Philadelphia Station, Penna. R. R., Phila., U. S. A.

Market Quotations

PAPER SECURITIES CLOSING PRICES TUESDAY

Reported by Stewart Tuttle & Co., Inc., 120 Broadway, New York

Stocks	BID	ASKED
Abitibi Power and Paper Company, Ltd.	56¾	57
Abitibi Power and Paper Company, Ltd., Pfd.	98¾	99
American Writing Paper Company, Pfd.	4	5
Brompton Pulp and Paper Company, Ltd.	30	30½
Donnacona Paper Company, Ltd.	45	50
Donnacona Paper Company, Ltd., Pfd.	98	100
International Paper Company	49½	49¾
International Paper Company, Pfd.	70½	72
Laurentide Company, Ltd.	82	82½
Price Brothers	36¼	36⅜
St. Maurice Paper Co., Ltd.	81	83
Smith (Howard) Paper Mills, Ltd.	28	29
Spanish River Pulp and Paper Mills, Ltd.	102⅞	103
Spanish River Pulp and Paper Mills, Ltd., Pfd.	113	113¼
Union Bag and Paper Corp.	46½	47½
Wayagamack Pulp and Paper Company, Ltd.	35½	36
West Virginia Pulp and Paper Company	53	55

Bonds	BID	ASKED
Abitibi Power and Paper Company, Ltd., 1st 6s, 1934	100	101
Abitibi Power and Paper Company, Ltd., Gen. 6s 1940	96	98
Abitibi Power and Paper Company, Ltd., Con. 8s 1931	102½	103½
Belgo Canadian Paper Company, 1st 6s 1943	96¾	97¼
Brown Company Serial 6s	99½	100
Carthage Sulphite Pulp and Paper Company, 1st 8s 1941	35	50
Continental Paper and Bag Mills Corporation, 1st and Ref. 6½s, Series "A," 1944	94	95
Donnacona Paper Company, Ltd., 1st 6s 1940	98	100
Eddy Paper Company, 1st 7½s 1931	94	95
Gair (Robert) Company, 1st 7s 1937	99	99½
International Paper Company, 1st and Ref. 5s (Series "B") 1947	85	85½
Mattagami Pulp and Paper Company, 1st 6s 1937	58	60
Mattagami Pulp and Paper Company, 1st 7s 1949	20	25
Oswego Falls Corporation, 1st 8s 1942	101½	102
Oxford Paper Company, 1st and Ref. 6s (Series "A") 1947	98	100
Parker, Young Company, 1st 6½s 1944	95½	97½
Paterson Parchment Paper Company, 1st 6s (Series "A") 1938	97½	99½
Peshtigo Paper Company, 1st 7s (Series "B") 1942	92	94
Price Bros. & Co., Ltd., 1st 6s (Series "A") 1943	98¼	99¼
Provincial Paper Mills, Ltd., 1st 6s 1940	98	100
Riordon Pulp and Paper Company, Ltd., Gen. 6s 1929	25½	30
Riordon Pulp and Paper Company, Ltd., 6s 1942	91	93
Riordon Company, Ltd., 1st and Ref. 8s 1940	96¾	97
River Raisin Paper Company, 1st 8s 1936	103	104
Smith (Howard) Paper Mills, Ltd., 6s 1934	95	95½
Smith (Howard) Paper Mills, Ltd., 1st Ref. 7s 1941	90	95
Spanish River Pulp and Paper Mills, Ltd., 1st 6s 1931	102½	103
Spanish River Pulp and Paper Mills, Ltd., Gen. 8s 1941	106	106½
Wayagamack Pulp and Paper Company, Ltd., 1st 6s 1951	74	77

Paper

F. o. b. Mill

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@30.00
Superfine	14.00	@30.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.65	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.15	@ 4.40
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.00	@ 9.75
M. F.	6.50	@ 8.75
Coated and Enamel	9.00	@15.00
Lithograph	9.00	@14.00
Tissues—		
White No. 1	.75	@ .90
White No. 2	.70	@ .80
Colored	1.05	@ 1.90
Anti-Tarnish	1.40	@ 2.30
Kraft	.90	@ 1.00
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	5.50	@ 6.25
No. 2 Domestic	5.00	@ 5.75
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.00	@
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.00
Fibre Papers—		
No. 1 Fibre	5.50	@ 5.75
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.50	@ 2.75
S. Screening	3.25	@ 3.75
Card Middler	4.00	@ 5.00
Boards—per ton—		
News	50.00	@52.50
Straw	50.00	@55.00
Chip	42.50	@45.00
Binders' Boards	75.00	@80.00
Sgl. Mla. Ll. Chip	55.00	@62.50
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.80	@ .90
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	12.00	@15.00
Bleached, basis 20 lbs.	14.00	@17.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	35.00	@40.00

(F. o. b. Mill)

No. 1 Domestic	27.50	@34.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.50
Easy Bleaching	2.90	@ 3.15
No. 1 strong unbleached	2.75	@ 3.25
No. 2 strong unbleached	2.50	@ 2.75
No. 1 Kraft	2.75	@ 2.85
Sulphate—		
Bleached	3.50	@ 3.65

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.45	@ 4.50
Easy Bleaching Sulphite	2.70	@ 3.25
News Sulphite	2.45	@ 2.75
Mitscherlich	3.20	@ 3.75
Kraft (Domestic)	2.70	@ 3.00
Soda Bleached	3.90	@ 4.10

Domestic Rags

New Rags

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	15.00	@16.00
New White, No. 2	8.00	@ 8.75
Silesias, No. 1	9.75	@10.25
New Unbleached	13.50	@14.50
Washables	8.00	@ 8.50
Fancy	8.25	@ 9.25
Blue Overall	9.00	@10.00
New Blue	6.00	@ 6.50
New Black Soft	5.75	@ 6.20
New Light Seconds	3.25	@ 3.50
O. D. Khaki Cuttings	5.50	@ 6.50
Men's Corduroy	6.00	@ 6.75
New Canvas	8.00	@ 8.25
New Black Mixed	3.75	@ 4.00

Old Rags

White, No. 1—		
Repacked	6.30	@ 6.55
Miscellaneous	5.55	@ 5.80
White, No. 2—		
Repacked	4.25	@ 4.50
Miscellaneous	3.75	@ 4.00
St. Soiled, White	3.00	@ 3.50
Thirds and Blues—		
Repacked	4.00	@ 4.25
Miscellaneous	3.00	@ 3.25
Black Stockings	3.50	@ 3.75
Roofing Rags—		
Cloth Strippings	1.93	@ 2.05
No. 1	2.40	@ 2.50
No. 2	2.30	@ 2.40
No. 3	1.20	@ 1.30
No. 4	1.20	@ 1.30
No. 5A	1.80	@ 1.50

Foreign Rags

New Light Silesias	7.50	@ 8.75
Light Flannelettes	8.00	@ 8.25
Unbl'chd Cottons	9.50	@10.00
New White Cuttings	11.50	@12.50
New Light Oxfords	7.75	@ 8.25
New Light Prints	7.25	@ 7.75
New Mixed Cuttings	3.25	@ 3.75
New Dark Cuttings	3.00	@ 3.50
No. 1 White Linens	10.00	@11.00
No. 2 White Linens	7.00	@ 8.00
No. 3 White Linens	6.00	@ 6.50
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.50	@ 5.00
Ord. Light Prints	3.00	@ 3.50
Med. Light Prints	2.40	@ 2.50
Dutch Blue Cottons	3.50	@ 4.00
Ger. Blue Cottons	3.00	@ 3.25
Ger. Blue Linens	3.50	@ 4.00
Checks and Blues	2.25	@ 2.50
Dark Cottons	1.50	@ 1.75
Shoppery	1.40	@ 1.60
French Blues	3.25	@ 3.75

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	1.80	@ 2.00
Domestic	1.75	¼ 2.00
Wool, Tares, light	1.55	@ 1.65
Wool, Tares, heavy	1.60	@ 1.70
Bright Bagging	1.50	@ 1.60
Sound Bagging	.90	@ 1.00
Manila Rope—		
Foreign	6.25	@ 6.50
Domestic	6.50	@ 6.75
New Bu. Cut	2.25	@ 2.50
Hessian Jute Threads—		
Foreign	2.25	@ 2.50
Domestic	2.10	@ 2.20

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.40	@ 3.90
Hard, White, No. 2	3.15	@ 3.60
Soft, White, No. 1	2.80	@ 3.15
Flat Stock—		
Stitchless	1.50	@ 1.60
Overissue Mag	1.60	@ 1.70
Solid Flat Book	1.45	@ 1.55
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	1.80	@ 1.90
Ledger Sort	1.60	@ 1.70
New B. B. Chips	.50	@ .55
Manilas—		
New Env. Cut	2.45	@ 2.60
New Cut. No. 1	1.75	@ 2.00
Extra No. 1 old	1.40	@ 1.50
Print	1.20	@ 1.30
Container Board	1.00	@ 1.10
Bogus Wrapper	1.00	@ 1.10
Old Krafts Machine compressed bales	2.05	@ 2.15
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	1.05	@ 1.15
Strictly Folded	.95	@ 1.05
No. 1 Mixed Paper	.75	@ .85
Common Paper	.50	@ .60

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.43	@ .48
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute—		
Dark, 18 basis	.30	@ .31
Light, 18 basis	.28	@ .30
Jute Wrapping, 3-6 Ply—		
No. 1	.20	@ .23
No. 2	.18	@ .20
Tube Rope—		
4-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.20	@ .28
4-ply	.21	@ .24
3-ply	.22	@ .25
Unfinished India—		
Basis	.14	@ .15
Paper Makers' Twine		
Balls	.12	@ .13
Box Twine, 2-3 ply	.14	@ .15
Jute Rope	.20	@ .40
Amer. Hemp, 6	.30	@ .32
Sisal Hay Rope—		
No. 1 Basis	.14	@ .16
No. 2 Basis	.10	@ .12
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill

All Rag Bond	35	@ 40
No. 1 Rag Bond	25	@ 35
No. 2 Rag Bond	14	@ 25
Water Marked Sulphite	9	@ 12
Sulphite Bond	7	@ 10¾
Sulphite Ledger	9½	@ 12
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 18
No. 2 Fine Writing	12	@ 14
No. 3 Fine Writing	9	@ 12
No. 1 M. F. Book	5½	@ 7½
No. 1 S. & S. C. Book	6½	@ 7¼
Coated Book	8	@ 10
Coated Label	8	@ 10
News—Rolls, mill	3¼	@ 4½
News—Sheets, mill	4	@ 4¾
No. 1 Manila	4½	@ 5½
No. 1 Fibre	5	@ 5¾
No. 2 Manila	3¼	@ 4½
Butchers' Manila	4	@ 4¾
No. 1 Kraft	5¾	@ 6¼
No. 2 Kraft	4¾	@ 5
Wood Tag Boards	4¼	@ 6
Sulphite Screenings	2½	@ 2¾
Manila Tissue, 24x36 sheet	7	@ 7¼
White Tissue, 20x30 sheet	7	@ 7¼
Boards, per ton—		
Plain Chip	45.00	@47.50
Solid News	47.50	@50.00
Manila Line Chip	57.50	@60.00
Container Lined—		
85 Test	67.50	@70.00
100 Test	72.50	@75.00

Old Papers

F. o. b. Chicago

Shavings—		
No. 1 Hard White	3.40	@ 3.50
White Envel. Cuttings	3.40	@ 3.50
No. 1 Soft Shav.	3.00	@ 3.05
No. 1 Mixed	1.65	@ 1.75
No. 2 Mixed	1.55	@ 1.60

Ledger and Writings	1.60	@	1.65
Solid Books	1.55	@	1.60
No. 1 Light Books.	1.15	@	1.20
Blanks	2.10	@	2.15
Ex. No. 1 Manila..	2.60	@	2.65
Manila Envelope Cuttings	2.75	@	—
Folded News (over-issue)	1.00	@	1.05
Old Newspapers—			
No. 1	.85	@	.90
No. 2	.80	@	.85
Mixed Papers—			
No. 1	.77½	@	.80
No. 2	.70	@	.75
Straw Clippings	.85	@	—
Binders' Clippings..	.85	@	—
Kraft	2.30	@	2.35
New Kraft Cuts	2.70	@	2.75
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	$45.00	@	—
No. 2	43.00	@	—
No. 3	41.00	@	—
No. 4	41.00	@	—

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.09	@	.53
Ledgers	.13½	@	.40
Writings—			
Superfine	.13½	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.08	@	.11
Book, S. S. & C.	.09¼	@	.12½
Book, Coated	.11½	@	.20
Coated Lithograph..	.10	@	.13
Label	.10	@	.13
News	.04¼	@	.05
No. 1 Jute Manila.	.12	@	.13
Manila Sul., No. 1.	.07	@	.10
Manila No. 2	.06	@	.08
No. 2 Kraft	.05	@	.08
No. 1 Kraft	.07	@	.08
Common Bogus	.03½	@	.04
Straw Board	55.00	@	60.00
News Board	42.50	@	—
Chip Board	40.00	@	42.50
Wood Pulp Board..	2.75	@	3.00
(Carload Lots)			
Binder Boards—			
Per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1-ply (per roll)	1.70	@	1.80
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply.	2.00	@	2.10

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	1.75	@	1.85
Domestic	1.60	@	1.70
Manila Rope	5.00	@	5.50
Sisal Rope	2.50	@	—
Mixed Rope	1.25	@	—
Scrap Burlaps	1.15	@	1.20
Wool Tares, heavy.	2.00	@	2.13
Mixed Strings	1.00	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.75	@	—

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.75	@	3.80
No. 2 Hard White	3.25	@	3.40
No. 1 Soft White	2.75	@	3.00
No. 2 Soft White	2.00	@	2.25
No. 1 Mixed	2.00	@	—
No. 2 Mixed	1.25	@	1.30
Solid Ledger Stock.	1.75	@	1.90
Writing Paper	1.50	@	1.75
No. 1 Books, heavy	1.45	@	1.60
No. 2 Books, light.	1.15	@	1.25
No. 1 New Manila.	2.40	@	2.50
No. 1 Old Manila..	1.50	@	1.75
Container Manila...	1.10	@	1.15
Old Kraft	2.00	@	2.25
Overissue News	1.05	@	1.10
Old Newspaper	.65	@	.70
No. 1 Mixed Paper.	.75	@	.80
Common Paper	.60	@	.70
Straw Board, Chip.	.65	@	.70
Binders Bd., Chip..	.65	@	.70

Domestic Rags—New.

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13	@	.14
New White, No. 2	.07	@	—
Silesias, No. 1	.08	@	.08¼
New Unbleached.	.11¼	@	.11½
Washable	.05½	@	.05¾
Fancy	.07	@	.07¼
Cottons—according to grades—			
Blue Overall	.08¾	@	.09
New Blue	.03¾	@	—
New Black Soft.	.06	@	.06¾
New Light Seconds	.03½	@	.03¾
Khaki Cuttings	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.09	@	.09½
New Black Mixed	.05	@	.05¼

Old

White, No. 1—			
Repacked	6.75	@	7.00
Miscellaneous	6.25	@	6.50
White, No. 2—			
Repacked	.05	@	.05½
Miscellaneous	.04¾	@	.05¼
Thirds and Blues—			
Repacked	3.40	@	3.60
Miscellaneous	3.15	@	3.25
Black Stockings..	4.00	@	4.25
Roofing Stock—			
No. 1	2.30	@	2.40
No. 2	2.20	@	2.30
No. 3	1.25	@	1.35
No. 4	2.10	@	2.20
No. 5A	1.40	@	—
B	1.25		nominal
C	1.15		nominal

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted	.12	@	.13½
Dark tinted	.13½	@	.15
Ledgers (sulphite)..	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)..	3.65	@	—
Sheets (carloads).	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rap	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	28.00	@	30.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	50.00	@	55.00
Sulphite, bleached..	80.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.60	@	—
Soft White Book shavings	3.00	@	—
White Blk. News	1.80	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.50	@	—
Light and Crumpled Book Stock	1.35	@	—
Ledgers and Writings	1.75	@	—
Solid Ledgers	1.75	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas..	1.20	@	—
Kraft	2.05	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News	.90	@	—
No. 1 Mixed Papers	.70	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto		Per lb.	
No. 1 White shirt cuttings	.15	@	.15¼
No. 2 White shirt cuttings	.07½	@	.08
Fancy shirt cuttings	.09	@	.09½
No. 1 Old Whites.	—	@	—
Third and blues	.05½	@	.05¾
		Per cwt.	
Black stockings..	.04	@	—
Roofing stock:			
No. 1	2.20	@	—
No. 2	2.10	@	—
Manila rope	.06½	@	.06¾
No. 2	1.55	@	—

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag Content	.16	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.14
Rag Content	.16	@	.33½
All Rag	.36½	@	.51
Writings	.08½	@	.20
Superfines	.20	@	.48
News	.04	@	.06½
Book, M. F.	.06¼	@	.10¾
Book, Super	.07½	@	.11
Book, Coated	.09½	@	.20
Coated Litho.	.10	@	.15
Label	.09½	@	.15
Jute Manila No. 1.	.12	@	.13
Manila, Sul. No. 1.	.05	@	.06
Manila, Sul. No. 2.	.03¾	@	.04½
No. 1 Kraft	.06½	@	.06½
No. 2 Kraft	.05¾	@	.05½
Common Bogus	.03½	@	.04
Straw Board	50.00	@	55.00
News Board	47.50	@	50.00
Chip Board	45.00	@	47.50
Wood Pulp Board..	80.00	@	85.00
Binder Boards	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	4.25
White Blank News.	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White..	3.10	@	3.25
No. 2 Soft White..	2.25	@	2.50
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock.	2.00	@	2.25
Writing Paper	—	@	1.70
No. 1 Books, Heavy	1.60	@	1.80
No. 1 Books, Light	1.40	@	1.50
No. 1 New Manila.	2.50	@	2.60
No. 1 Old Manila.	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.00	@	2.25
Overissue News	1.00	@	1.20
Old Newspapers	.90	@	1.00
No. 1 Mixed Paper.	.70	@	.75
Box Board, Chip	.70	@	.75

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	1.12½	@	2.00
Domestic	2.00	@	2.12½
Manila Rope	6.00	@	6.50
Mixed Rope	1.50	@	1.62½
Scrap Burlaps	1.25	@	1.50
Wool Tares, heavy.	2.00	@	2.13
Mixed Strings	1.50	@	1.62½
New Burlap Cuttings	2.00	@	2.25

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.13½	@	.14
Silesias, No. 1	.09	@	.09½
New Unbleached.	.12½	@	.13
Washable	.06	@	.06½
Fancy	.07	@	.07¼
Cottons — according to grades, Blue Overall	.09½	@	.10
New Blue	.05½	@	.06
New Black, soft	.06	@	.06¾
Khaki Cuttings	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.10½	@	.11

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1—			
Repacked	7.50	@	8.00
Miscellaneous	6.50	@	7.00
White No. 2—			
Repacked	5.50	@	6.00
Miscellaneous	4.75	@	5.50
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous	3.00	@	3.25
Roofing Stock—			
No. 1	2.25	@	2.37
No. 2	2.12½	@	2.25
No. 3	1.50	@	1.75
No. 4	1.15	@	1.20

ABITIBI COMPANY PLANS

(*Continued from page 25*)

"Reforestation as a definite factor in the economic life of the St. Maurice Valley has come to stay. This is emphasized by the decision of the Shawinigan Water and Power Company, Limited, to commence planting denuded timber lands in the valley, particularly those adjacent to the water powers on the St. Maurice River.

"Already the Laurentide Company, which did the pioneer work in forest planting in the St. Maurice Valley, if not in Canada, has made definite progress toward the reforesting of cut over and burned lands in the valley and the moral support accorded the movement by the contemporaneous action of the Shawinigan Water and Power Company and the Laurentide Company places it on a permanent and constructive basis."

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, November 26, 1924.

The paper market did not show any startling changes during the week although lots of people in the industry seemed to think it might. Some of the articles are good, particularly in the raw material market, some are bad, in the pulps, and others are indifferent. A satisfactory volume of business was done on the whole, however, both in the open market and in futures.

A certain gentleman who deals in paper complained that "hard times were coming" and "the way people are talking you'd think our desks ought to be all littered up with orders." As a matter of fact they probably will be seen if the trade retains a little confidence in itself. Some business men believe that when they hear the wolf at the door they ought to open it up and show him in.

Wrapping and tissue papers evidenced some signs that they were getting a little of the holiday spirit. It is a matter for the study of a psychoanalyst that the large retail stores, who beg their customers to do their Christmas shopping early, frequently wait until the last minute to shop for the things they need at that time. So wrapping, tissue and writing paper dealers have let their collision mats overside and are waiting for the expected onslaught of buyers.

Incidentally the news from business in general continued good during the week and the paper industry is always the first to feel general prosperity. While the general tendency to buy is not quite so marked as the particular one which has been making itself felt in Wall Street there is a very considerable volume of normal, healthy purchasing throughout the country.

Advertising men are selling good sized contracts setting forth the virtues of everything from toilet water to axle grease and of course all of these mean money to the paper man. Agencies are increasing their space all the way down the line and newspapers are running more pages.

Perhaps one reason for a little of the slowness during the week was the fact that many persons from the offices in the city forgot all about paper to go to their favorite haunts upstate and out of the state in pursuit of turkey and cranberry sauce. There was not a single article on the paper market in half as much demand as that pompous bird with the positive voice and the fan shaped tail.

Mechanical Pulp

Mechanical pulp still moved along at a good rate of speed during the week with no changes in the price except when a particularly large buyer came along and snapped up a distressed lot. There were not many of these either. The news print mills are keeping things going at a rate of speed that is a trifle above average in this market and they show every indication of continuing to do so.

Chemical Pulp

The chemical market was good in spots and bad in others during the past week. There is still some uncertainty as to which way the cat is going to jump and the tendency of many buyers seems to be not to do any guessing about it, but to wait until said feline actually takes the leap.

Old Rope and Bagging

Rope did not seem to be slacking up any during the week. The demand continues pretty good and dealers say they have orders enough still to fill the brief case of a tyro attorney. Bagging showed some tendency toward precocity a week or so ago and now it seems to have settled down to an ordinary sort of future. Dealers all agree that prices will remain just the same.

Rags

Rags, usually a doleful subject, continued to be a cheery one with the dealers during the week. Prices are no steadier than the value of a Federal Reserve note and now that the buyers have found it out they seem to have come into the market for keeps.

Waste Paper

In the better grades waste paper still held up with the lower ones following along behind, but with more briskness than heretofore. Dealers seem to think that the whole market is showing something of an upward tendency, but as yet the buyers do not agree with them so quotations remain just about the same.

Twine

A good demand for twine was reported during the week with everything holding firm particularly prices.

Boston Paper Trade Meeting

BOSTON, Mass., November 22, 1924.—Those regular attendees at the annual fall meetings of the Boston Paper Trade Association who failed to be present at the annual fall meeting held at the Exchange Club, on Wednesday evening last, missed one of the rarest treats ever afforded the members of the association.

The attendance was as large as those of previous fall gatherings but was largely made up of new members and their guests. Aside from the excellent dinner for which the Exchange Club is justly famous, the two speakers of the evening, Gerrit Fort, Vice-President of the Boston & Maine Railroad and Ralph P. Robinson, Chief Assistant to Captain Donald MacMillan, the Arctic Explorer, afforded an evening of interesting discourse which made the occasion a memorable one for those present.

A short business session was held prior to the talks during which W. F. McQuillen was appointed chairman of the nominating committee which will report on the selection of officers at the annual meeting next March. President W. B. Stevenson, in introducing Mr. Fort, referred to the close relations of the railroads and the paper industry, particularly in New England where is produced a large tonnage of all grades.. Mr. Fort outlined the problems of present day railroading, emphasizing the competition which the motor truck brought and which has affected the short haul freight traffic of the railroads. His analysis of the rail mileage owned by the Boston and Main showed the State of New Hampshire possessing more than double the trackage of any other of the New England States. Of seventy commodities handled by the Boston and Maine the tonnage of paper ranked fourth, being exceeded by coal, lumber and petroleum. In 1923 this railroad handled 336,686 tons of pulpwood and 957,000 tons of paper. His company spends approximately $5,000,000 annually for stationery and printing of which paper is the chief item. He further informed his audience that the Boston and Maine for the first time, since passing from government control, would show a surplus earning over its fixed operating charges. As to a change in freight rates he advanced the information that the Federal Trades Commission has instituted an investigation which would call for hearings in all the important industrial sections of the country where the fullest discussion of the subject would be given.

Mr. Robinson who has made four expeditions with Captain Mac Millan to the Arctic Circle completely enraptured his hearers with his tales of the Northland and its Eskimo inhabitants. His talk was illustrated with pictures taken by him during his four trips, showing the living modes of habitants of the Baffin Land and North Greenland and his word picture of each scene gave one the feeling of being right on the spot with him. The expedition from which he has just returned was sponsored by the National Geographic Society which has commissioned the MacMillan party to place a bronze tablet at the spot where the survivors of the Greeley expedition were rescued from starvation, Greeley and five companions being the only ones left of a party of thirty when the rescuers reached them. After a nearly two hours' narrative Mr. Robinson met several among those present whom he knew as classmates and gave them more of his experiences—experiences which many men would like to realize but few could endure.

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, November 26, 1924.

The chemical market has been in pretty good condition during the past week with everything looking toward a better demand and a number of good sized orders going through the local market. Dealers report, however, that this is due not so much to a call for raw materials from the paper industry as from other businesses which are usually good sized buyers at this time of year. Indications of an all around revival of general buying in the paper market are evident and this will mean a large increase in business for the chemical man. Prices have remained just about the same, but they are very firm in most instances with little tendency to move in any direction, but upward.

BLANC FIXE.—The demand for blanc fixe has stayed just about the same with signs of improvement in the form of numerous inquiries that are coming to the desks of dealers. The price is $75 to $80 a ton on the powder and $50 to $55 on the pulp.

BLEACHING POWDER.—The market for bleach was still not quite all that might be desired during the week, but there were a few large orders placed at the prevailing price of 1.90 to 2.15 cents a pound.

CAUSTIC SODA.—Caustic still continued to be in pretty good demand from other sources outside the paper industry. The paper mills, however, are running more briskly and are looking toward this item with an eye to future buying. The price is at 3.10 to 3.15 cents a pound.

CASEIN.—The casein market remained somewhat sluggish with importations still coming in slowly and a good deal of the domestic variety on hand in the spot market. The price is still around 10 cents a pound.

CHLORINE.—The chlorine market was a little better during the week with the buyers showing more of a tendency to come into the market for large quantities and dealers having plenty on hand to give them. The price is around 4.50 to 7 cents a pound in tanks.

ROSIN.—Rosin rode along on a fairly brisk demand which has been affecting all naval stores for the past month. Little of this was due to the paper industry, however, and the price remained very firm in the neighborhood of $6 in barrels.

SALTCAKE.—Saltcake is still doing an excellent imitation of the slow moving motion picture, but dealers and manufacturers are not very much worried because it is a by product anyhow. They have thrown it into their warehouses where it will be just about as good for selling purposes if the demand does not come to life for a year. The price is from $17 to $20 a ton.

SULPHATE OF ALUMINA.—A fairly good demand for alumina brought smiles to the faces of the dealers. They deny that they are indebted to any great extent to the paper industry for this. Nevertheless the price remained at from 1.30 to 1.35 cents a pound on the commercial grade and 2.10 to 2.25 cents on the iron free.

SULPHUR.—Sulphur refused to be excited one way or the other during the past week. It just jogged along at from $18 to $19 a ton asking and giving no concessions.

TALC.—Talc, perhaps the only article in this market with any bid to frivolity, remained as conservative as the language of a spinster's parrot. The demand was the same. The supply was the same. The price was the same—$16 to $17 a ton.

Kalamazoo Trade Personals

KALAMAZOO, Mich., November 24, 1924.—Alexander L. Clark, secretary-treasurer of the Standard Paper Company, accompanied by Mrs. Clark, has gone to Phoenix, Ariz. They will later go to California to remain during the winter months. Mr. Clark recently suffered a severe attack of pneumonia and his health is too much impaired to withstand the rigors of a Michigan winter.

Obituary

Benjamin Palmer

BOSTON, Mass., November 24, 1924.—Benjamin Palmer, who had been for more than 40 years a member of the book keeping department of Carter Rice & Co., died last week after a brief illness. He was 67 years old. He recently underwent an operation from which he did not rally.

Charles A. Childs

[FROM OUR REGULAR CORRESPONDENT.]

LEE, Mass., November 25, 1924.—Charles A. Childs, 88, died last week at his home in East Lee of heart trouble. He was superintendent of the Benton Brothers paper mill for 45 years and was one of the town assessors many years. He leaves, besides his wife, one brother, Edward M. Childs.

Increase Number of Directors

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., November 26, 1924.—Certificates showing the increase in the number of directors of the power Corporation of New York from 14 to 21 and the increase in the capital stock from 500,000 to 700,000 shares were filed in the county clerk's office here recently.

This company with F. L. Carlisle as the organizer was incorporated October 19, 1922, and in February of this year there was a re-classification of the stock. There were formerly 400,000 shares of no par value common stock and 100,000 shares of stock of $100 par value. Under the present capitalization there is no change made in the latter stock, but the no par value common stock is increased from 400,000 to 600,000 shares.

Parchment Garden Awards

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., November 24, 1924.—The better garden contest at Parchment for 1924 closed. The prizes were awarded as follows: Best general garden, Mr. and Mrs. William C. Fisk, $15 cash, also an order for $10 worth of shrubs and plants from the Kalamazoo City Savings bank; Mr. and Mrs. John Boldman, $10; Mr. and Mrs. Gerald Wead, $5. Best flower garden, Mr. and Mrs. Francis Southon, $10; Mr. and Mrs. Alonzo Zeppernick, $10; Mr. and Mrs. Gerald Wead, $5. Best flower garden, Mr. and Mrs. Charles Kindleberger, $10; Mr. and Mrs. E. T. Williams, $7.50; Mr. and Mrs. George Rive, $5. Parchment baseball players and Parchment Boy Scouts were guests and each received a reward.

INDUSTRIAL POWER

(*Continued from page* 88)

use exhaust steam, reducing from 180 to 115 pounds. For years they wanted to get power out of that steam drop but until control mechanism had been perfected it was not possible to do it. Now, however, such control apparatus is available, and they have produced 20,000 kilowatts, with 180 pounds initial pressure and 115 back pressure. The back pressure is regulated to suit the demand for exhaust steam; and their engineers, figuring in the most conservative manner, estimate they can generate 1,000 kilowatts of power for 1/7 of what it was costing to generate the 20,000 kilowatts in the main plant, or the generation of a kilowatt on ¼ of a pound of coal.

That certainly is better than even the most efficient public utility where they produce one KW on a pound of coal.